Railway Age

Vol. 85 December 22, 1928 No. 25

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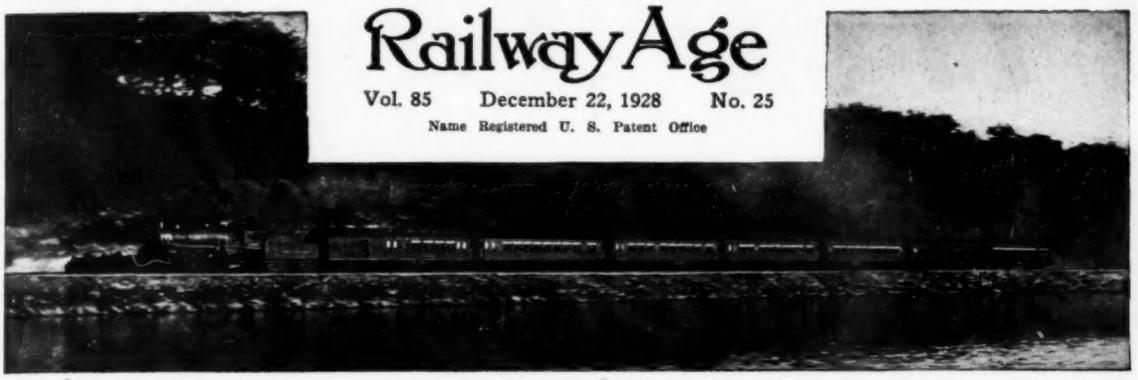

"The Twentieth Century Limited" along the Hudson River

Contents

Published every Saturday by the Simmons-Boardman Publishing Company, 34 North Crystal Street, East Stroudsburg, Pa., with executive offices at 30 Church Street, New York.

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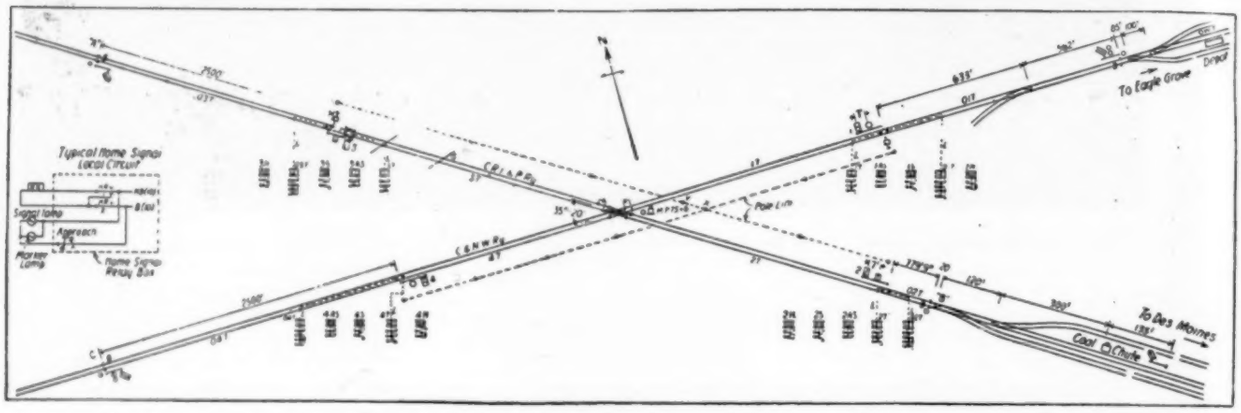
The Railway Age is a member of the Associated Business Papers (A. B. P.) and of the Audit Bureau of Circulations (A. B. C.).

Subscriptions, including 52 regular weekly issues and special daily editions published from time to time in New York, or in places other than New York, payable in advance and postage free; United States, Mexico and Canada, $6.00. Foreign countries, not including daily editions $8.00.

Subscriptions for the fourth issue each month only (published in two sections, the second of which is the Motor Transport Section) payable in advance and postage free; United States, Mexico and Canada, $1.00; foreign countries, $2.00. Single copies, 25 cents each.

First Come—



Track and Signal Layout of Automatic Interlocker at Laurens, Iowa, C. R. I. & P. Rwy.

Rock Island Uses Fixed Lower Arm as Marker on Home Signal.

Northwestern Uses Marker Light on Home Signal.

District Offices

New York Montreal Chicago St. Louis San Francisco

Railway Age

Vol. 85, No. 25 December 22, 1928

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Good Service or Low Rates?

HAS the great improvement in railway service within recent years had any substantial effect upon the attitude of shippers regarding freight rates? In the period prior to and during the war there were large shortages of cars, and the movement of freight was slow and uncertain. Shippers of all classes and sections made loud complaints about these conditions. They were almost unanimous in saying that good railway service was more important to them than a small difference in rates. They did as a matter of fact, oppose practically every advance in rates for which the railways asked. There seemed, however, to be reason for hoping that if the service was improved the feelings of shippers would so change that they would co-operate with the railways in getting the rates and earnings essential to the maintenance of good service.

Since 1923 the improvement made in freight service has been much greater than the most optimistic shipper or railway officer hoped that it would be. There have been no shortages of cars during this period. The movement of freight has become more regular, dependable and speedy than ever before, and all classes of shippers frankly concede that every branch of industry, commerce and finance has been greatly benefited.

Shippers commend the railways for what has been accomplished. They express themselves in friendly terms. Most of them endorse the general principle that the railways should be allowed to earn a fair return in order that they may be able to continue to render good service. But at this point practically all of them seem to stop. Extremely few will agree to an advance in their own rates, however clearly the need and justice of it may be shown. The farmers, who, perhaps, suffered more from the effects of car shortages than any other class, are, if we may judge by what their spokesmen say, the most insistent of all upon a reduction in the rates upon their products. Many large shippers and commercial associations apply constant pressure to the railways for reductions.

Even more significant, perhaps, is the fact that many of the leading organizations of business men are energetic in seeking the development by government aid of means of trahsportation which necessarily would render a service inferior to that by rail. We refer, of course, to the movement for the development of inland waterways and for government ownership and operation of the carriers upon them. The service by inland waterways is necessarily much slower than by rail and can hardly be made as reliable. It cannot be rendered at all during part of the year on the northern waterways. It is sought entirely as a means of getting lower rates.

Shippers must know that the diversion of traffic from the railways adversely affects their earnings, and that this in turn tends to impair their ability to render good service. Some of them, however, are so ardent for waterway development that they even intimate they will not help the railways in opposing plainly unjust regulation unless the railways co-operate with the Inland Waterways Corporation in making through routes and joint rates. It is no secret that the main reason why the railways probably will not contest in the courts the constitutionality of the Denison act is that it was broadly intimated to them that if they did so congressmen from the middle west, where the waterway sentiment is strongest, might help to pass legislation to abolish the Pullman surcharge. Most shippers are opposed to legislation to abolish the surcharge, but do those who favor inland waterway development disapprove of the use of the threat of surcharge legislation as a means of clubbing the railways into bowing to the Denison bill, as interpreted by the Interstate Commerce Commission?

There has been much talk within recent years about "co-operation" between railways and shippers, especially through the Regional Shippers' Advisory Boards. There has been real co-operation, and it has contributed toward the greatly improved service the shipper has received. The improvement in freight service has been due in greater measure, however, to the large investment of new capital the railways have made than to co-operation by the shippers. The railways need larger net earnings to enable them to continue to provide the facilities required for the continued rendering of good service. The shippers, with few exceptions, have given and are giving the railways no co-operation in their efforts to get the "fair return" to which they are entitled.

When the attention of well-informed shippers is called to this fact they make various answers. One of these is that the railways are "doing pretty well". What is "pretty well" is a matter of opinion. No other large industry would be satisfied with the return the railways have been earning. It is the announced policy of the government to so regulate rates that the railways will be able to earn a "fair return" annually. If the shippers believe this is a sound policy, how can they believe the railways are "doing pretty well" when year after year they fail to earn a "fair return"? Another answer made is that it is for the railways to take the initiative in seeking whatever advances in rates may be needed to compensate for reductions that are made by regulation and to enable them to earn a fair return. This answer undoubtedly has merit and force, but probably it does not indicate the true attitude of shippers so well as the undoubted fact that the railways will meet with strong opposition from shippers to any advance in rates they may seek to make.

Do the shippers really want such good railway service as is now being rendered or low rates? The day is past when railway managers could cherish the illusion that if they gave good service the shipping public would reward them by actively supporting a policy of regulation of rates which would enable the railways to earn a fair return. The heads of most large business concerns give little attention or thought to conditions and developments outside their own particular lines of business, and will never get much excited about lack of railroad prosperity as long as railroad service is good. The traffic representatives of large business concerns and associations of shippers naturally consider it their functions to get the best possible service at the lowest possible rates for their own employers, and therefore largely disregard the broader effects that their policy may have upon railway earnings and service, and consequently upon the entire industry and commerce of the country.

If the railways are to enjoy a reasonable measure of prosperity they must probably follow a policy similar to that of the shippers. They must resist pressure for improvements in freight service that shippers demand, but for which they show no willingness to pay. They must also resist pressure for reductions of rates and apply counter-pressure for advances. If the railways are to do these things effectively they must compete less and co-operate more than in the past. They will also have to do more work to educate shippers to an acceptance of the fact that the railways have the same right to prosper as other industries, that their managers intend to spare no reasonable effort to make them prosper, that there must be maintained some relationship between the character of the service rendered and the rates paid for it, and that unless shippers will co-operate with the railways in getting and maintaining remunerative rates they must not expect to get a kind of service for which they are unwilling to pay.

The improvements in railway freight service within recent years have been numerous and great, but many of them have made operating expenses greater than they otherwise would have been. It seems highly probable, in view of the general attitude of shippers regarding rates, that the railways should give, and will even be forced to give, less attention in future to improvements in service and more attention to economies in operation. No industry can permanently prosper by giving its customers service better than that for which they are willing or can be made to pay.

Speeding Up Freight Service

THE results of operation in October show that the railway transportation machine of the country is working more efficiently than ever before. The real test of each year comes in the last one-third of the year, and usually in October, because ordinarily the peak of the traffic movement is reached in that month. The number of tons carried one mile in October exceeded 48,200,000,000 and was the largest in any month in history excepting October, 1926, in which it was exceeded by only two-tenths of one per cent.

The total number of freight cars the railways had on their lines was about 46,500 less than two years previously, but the cars were moved an average of 36.2 miles per day, which surpassed all previous monthly records. It is owing to this record-breaking average daily movement per car that the railways, although having available a smaller number of cars, were able to handle the peak movement while maintaining about the same car surplus as two years before.

It is interesting to note how completely, in actual performance, the railways have surpassed one of the standards of efficiency in operation that they formerly adopted. When the presidents of the railways in the spring of 1923, adopted their comprehensive programme for increasing the efficiency of operation and rendering an adequate freight service, one of the goals they set was an average daily movement of freight cars of 30 miles. Average miles per car per day in 1920 had been 25.1 and in October of that year 28.6. In the year 1922 it had been 23.5 and in October of that year 26.6. The average attained in the entire year 1923 was 27.8 miles per car per day and in October of that year a new high record of 30.7 was set. The average mileage per car per day in the first ten months of this year was 31.2; and the new high record of 36.2 in October was 26 per cent better than in October, 1920, 36 per cent better than in October, 1922, and 18 per cent better than in October 1923.

The figures reflect prompter loading and unloading of cars by shippers as well as more rapid handling of them by the railways, and show that the freight of the country is being handled with constantly increasing speed. The result is that the length of time each ton of freight is in transit is being shortened, which not only reduces the length of time the investment in it is tied up, but also enables business concerns to reduce the stocks carried by them and the investment in these stocks.

It has required a large investment by the railways and many improvements in operating methods to effect the speeding up of transportation service that has occurred, and this speeding up of transportation service has had numerous and far reaching effects upon the industry and commerce of the country.

Does Better Maintenance Pay?

THE steady decline in the percentage of the locomotives inspected by the Bureau of Locomotive Inspection, Interstate Commerce Commission, which are shown as being defective in each year's report, and the decline in the percentage of locomotives in or awaiting shops which has taken place during the past few years, are both evidences of the splendid condition in which the motive power of American railroads is now being maintained. The percentage of locomotives inspected which were found defective by the Bureau of Locomotive Inspection declined from 46 in 1925 to 31 in 1927 and, in the report of the chief of the Bureau just issued for 1928, a still further reduction to 24 per cent is shown. The generally satisfactory records with respect to engine failures is a further evidence that more exacting standards of maintenance are being adhered to now than probably at any previous time in the history of the railroads.

This steady improvement in the condition of motive power has not increased the cost of maintenance. It has, in fact, been accompanied by evidences of a steadily declining cost. In 1925 the monthly average of locomotives receiving class repairs was approximately 3,600. In 1927 this had been reduced to about 3,200, or a decline of a little more than 10 per cent. During

the first 10 months of 1928 the monthly average was, in round numbers, 3,000. While the trend in the number of locomotives receiving running repairs has been much less consistent than that in the number receiving classified repairs, the general tendency has been toward a decrease.

This indication of a decrease in the amount of work required to keep up a high standard of maintenance, once it has been established, is accompanied by a similar trend in the number of men employed in locomotive maintenance. The number of machinists employed by the Class I railroads in September, 1925, was 59,600. For the same month a year later there had been a slight increase to 60,300. Since that time there has been a steady decline to 57,800 in September, 1927, and 54,900 in September of this year. This is a decline of eight per cent since 1925. The situation is similar in the case of boiler makers, of whom there were 19,400 employed in September, 1925; 19,100 for the same month of 1926; 18,100 in 1927, and 16,550 in September of this year—a reduction of 14½ per cent in three years.

The decreasing maintenance expenditures which these facts indicate are undoubtedly not alone attributable to the high standards of maintenance which now prevail. They are partially the result of better personnel relations which have improved the efficiency of the employees generally, of more centralized repair operations, of better shop facilities, and of better systematization and increased specialization in maintenance processes. The extensive development of long locomotive runs, both in passenger and freight service, has been an important factor leading to these changes in maintenance practice and forcing the highest of maintenance standards. It is evident, therefore, that if changes in practice have played a part in reducing maintenance expenditures, the same condition which has forced the higher standards has also tended to reduce the costs. As a general policy, high standards of locomotive maintenance have proved themselves to be economically sound.

The Private Motorist's Comlpaint

IT seems a safe assumption that there would have been no extensive hard-surfaced highway system of any importance in this country if it had not been for the private automobile. The cost of constructing these highways has been tremendous and has been spread, generally speaking, over all taxpayers. It would have been difficult to convince these taxpayers originally that they should have put up the money for hard-surfaced highway construction if the proposed highways could have been of use to no one but common carrier motor coach and motor truck lines. Yet is that not exactly the manner in which conditions are tending—i.e., have not the taxpayers paid for a facility which they are beginning to fear to use themselves, common carrier motor coaches and trucks having become so numerous in some localities as to crowd private automobiles off the roads? Witness the plaint of a citizen of New Jersey published in the New York Herald-Tribune:

> New Jersey is overwhelmed by interstate trucks and bus lines crowding the unfortunate residents of the state from the highways. As fast as new highways are built more bus and truck lines are created to fill them... Legislation in favor of trucks and buses will continue until the automobile, tire and gasoline companies realize that private automobiles will not be bought or used to the extent they formerly were before the roads became unsafe.....
>
> Interstate trucks and buses are an economic fallacy, for if they paid proper and adequate fees for the use of our roads they would be unable to compete with the railroads. The railroads pay into the state coffers some 16 or 17 million dollars yearly in taxes and at the same time provide their own right-of-way and upkeep, while the interstate trucks and buses pay no taxes to this state and pay but a small license fee for each truck or bus. We do not even receive the benefit of the tax on gasoline, since the offenders buy their gas in New York or Pennsylvania, and we automobilists and taxpayers, pay for the building and upkeep of the roads that we are crowded from.....

Every taxpayer knows that hard-surfaced highways are expensive to build. It should now be fairly clear, also, that it is extremely difficult to provide such highways to the full extent of the demand. There are a good many transportation situations where the motor coach and motor truck are better adapted to meet "public convenience and necessity" for transportation than the railroad or any other agency. In such cases, clearly, provided the truck and motor coach lines pay an adequate fee for the privilege of using the highways, they ought to be encouraged to operate. Every vehicle on the roads, however, which transports something which could better be handled by some other method of transportation adds unjustifiably to the congestion. If a given highway is crowded beyond its traffic capacity, a need for further facilities arises. Who should pay for such additional facilities, the ordinary taxpayer and private automobile owner, or the class of traffic which has never, generally speaking, as the ordinary taxpayer has, paid its full share of the cost of highways already built?

One criterion in determining which highway operations are justifiable certainly should be the public convenience and necessity of their service. If they meet the requirement of public convenience and necessity, then their presence on the highways should be welcomed. Whether or not they meet this requirement is judicially determined in most states for intrastate motor coach lines as a prerequisite for authority to operate; in a few states it is determined for intrastate motor truck lines; but in no case is it determined authoritatively for interstate lines—passenger or freight. The first desideratum of the private automobile owner, therefore, should be the bringing of all lines, freight and passenger, under regulation. This would keep off the highways such additional congestion as is caused by unnecessary and uneconomic motor transport lines.

In the second place, taxation of motor vehicles ought to be worked out scientifically in the endeavor to levy taxes which would represent the full value of the highways to commercial users. Taxation of such vehicles in many states now is high, but no great effort seems to have been made to make it scientific, i.e., nicely gauged according to the value of the highways to the user, levying on each a fair share of the total cost of such facilities. If taxation for the use of existing highways were so based, there might be an incentive for commercial users to advocate the building of "express" highways, which proposal several daily papers are now supporting, which highways would be built and maintained solely by their users and at no cost to the general taxpayers. Such a consummation would be a great relief to the harassed motorist who now pays all the bills, and then is crowded off his highways by heavier vehicles for the operation of which there is no justification in economics or public convenience.

Classified Car Inspection Needed*

Systematic attention to "order cars" will create better satisfied shippers and reduce empty car mileage

By C. J. Nelson

Chief Interchange Inspector, The Chicago Car Interchange Bureau, Chicago

THERE is nothing more irritating to a shipper than to have cars placed at his plant, which he expects to load at a certain time, and then find that they are unfit for the shipments for which they were ordered. It is about as irritating to have the shipments damaged or delayed in transit on account of inferior equipment, and that is something that we can prevent to a greater extent than has been done in the past. By increasing our efforts along these lines, we will not only create further satisfaction to the shippers and the public, but we will also decrease the expense of operating the railroads.

One of the many problems in this connection is the classification of freight cars for commodity loading. If we had reasonably accurate figures to show the cost of unnecessary cross-hauling of empty cars, as well as the unnecessary detention of freight cars on account of being found unfit for the lading for which they were furnished, I dare say that the figures would be surprisingly large.

If the railroads were permitted to function the same as other industries, without the strangling regulations with which we are all so familiar, they would, no doubt, be able to keep freight cars in better condition for general service and, by the same token, provide for more regularity in the employment of carmen. Knowing as we do, however, that present limited railroad earnings make this difficult, we are in duty bound to do the best we can to have cars selected and furnished in suitable condition to carry their loads to destination, without damage or delay, barring accidents.

In order to function efficiently in the handling of this matter, car service and operating officers, as well as station agents, must understand just what is required of them, because without their full co-operation practically all of the carmen's efforts and good intentions will be in vain.

Rejections Increase Empty Car Mileage

From personal observation, I judge that the majority of unnecessary car-mile hauls are created on account of cars that are offered to connecting lines, on orders for designated commodities, being rejected, either at interchange points or by the shippers, on account of being unfit. In the efficient handling of these "order cars," the adoption of some uniform and definite plan, strictly adhered to by all the railroads, is essential. The plan I am going to outline is not new; many roads have adopted it but are far from carrying it out as intended; others have not adopted it. The proposed plan consists essentially of these parts:

(1) The road placing the order should be careful to specify the commodity for which the cars are wanted, also to outline special exceptions, such as all-steel roofs, steel ends without lining, limited width of doors on automobile cars, etc. This information should be furnished to the operating and mechanical departments.

* Abstract of a paper presented before the October meeting of the Car Foremen's Association of Chicago.

(2) The road from which the cars are ordered should have such cars carefully inspected immediately prior to delivery and, if found in suitable condition, a card reading as indicated below should be properly filled out by those who inspect the cars, and attached to both sides of each car furnished:

..... Railway
Car No..... Initial .....
Furnished on.....Ry., Order No.....
Date.....19.... for loading.....
Inspected and O.K. for loading.....19....
..... Inspector.

(3) After suitable cars have been selected, the initials and numbers, location, etc., should be furnished to designated operating officers, and in no case should "order cars" be forwarded to connecting lines without bearing the aforementioned or similar inspection cards, of recent date.

Especially Trained "Order Car" Inspectors Needed

Deciding whether or not cars are suitable for the many varied commodities that are susceptible to damage by water, lime or cement dust, oil on floors, odors, etc., requires careful training and good judgment, and at points where it can consistently be done, the selection of "order cars" should be assigned to such men as have been especially educated for that line of work. In other words, at the larger stations where a number of inspectors are employed, one man, or only as many as may be needed, should be trained for this important work, instead of attempting to educate the entire inspection force.

Some roads are doing this, but still there seems to be a deplorable lack of understanding on the part of some of these specialists as to just what is required, and I judge that to be mostly due to the fact that the supervisors under whom they are employed, either are not familiar with the requirements themselves, or they have not made the proper efforts thoroughly and intelligently to instruct their "order car" inspectors. I am of the opinion that the most exacting care should be exercised in this, and that it is just as important to subject such employees to a rigid examination periodically, for the purpose of ascertaining whether or not they are keeping up-to-date in their knowledge, etc., as it is to examine inspectors on the other important rules and regulations.

The instructions covering the classification of freight cars for commodity loading should be clear and definite, and the "order car" inspectors should clearly understand that, for example, if oil on the floor is objectionable, a car with only small or faint oil spots on the floor must not be offered to connecting lines, or the shipper. The great trouble today is, that when some "order car" inspectors find small oil spots, light coatings of lime or cement dust and similar irregularities that make the cars unserviceable, they will pass the cars along, with the thought that they will slip through without exceptions, which, in my judgment, is entirely wrong.

The carriers are continually appealing to the shippers to co-operate in the prevention of claims, which naturally results in the shippers becoming more and more exacting in loading, and this is, no doubt, in the best interests of all concerned. We frequently hear remarks, ordinarily in the form of an alibi, that the shippers are far more technical than formerly, and that, no doubt is true, because we know that during the war, and for a long time after the close of the war, they loaded cars that they would positively decline to load today. It seems to me, however, that this stand is now fully justified, and we should begin to realize that the time has arrived when all concerned have a right to expect cars placed for loading to be in suitable condition to carry loads to destination, without being damaged by irregularities that existed in, or on, them prior to loading. There is, of course, the possibility of shippers becoming over exacting, and carmen who have the welfare of their employers properly at heart, can do a great deal towards diplomatically straightening out such cases to the best interests of both the shippers and the carriers. They should also assist as much as they can in convincing the consignors of their responsibility for proper cleaning of cars after removal of the loads.

While we agree that the delivering lines should fulfill their obligations to the fullest extent in furnishing suitable "order cars" to connecting lines, we should also bear in mind that the best inspectors are liable to overlook or misjudge some of the irregularities on a car and, no matter how earnestly we endeavor to create uniformity and proper understanding in connection with the selection of order cars, we will always have conflicting opinions. In other words, if a delivering line has made the proper effort, by having the order cars inspected and properly side-carded within a reasonable time before they are delivered, that fact should be given due consideration on the part of the receiving line, and it seems to me that a car delivered under such circumstances should be accepted, and the overlooked irregularities corrected, if this can be done without too much penalty. If it is done, however, I believe the receiving line should advise the delivering line, by letter, outlining the reasons for which the cars were found unfit, as well as the work performed to put them in shape for the commodity for which they were ordered. The delivering line should then use such information to stimulate better inspection. It might be desirable to use some kind of a form for this purpose in order to prevent too much letter-writing. If, however, the delivering line makes no effort to perform its obligations, it can hardly be expected that the receiving line will make special effort in the line of co-operation.

In regard to selecting cars for loading on home-roads, we know that most roads are making efforts to have side cards attached to box cars to indicate the kind of freight they are suitable for but I fear that the manner in which this is handled is not producing desired results. I believe it can be safely said that we can find a large number of cars on every trunk line in the United States, carrying side cards, all the way from one month to a year old, to indicate that they are suitable for such commodities as grain, flour, cement, etc., and that many of them are entirely unfit for the commodities for which they are carded. The detrimental results are that when these defective cars are placed for loading in accordance with side carding, especially at points where no car inspectors are available, the agents, or others, invariably take it for granted that the information shown on the side cards is reliable. How to handle this matter efficiently is a problem requiring most careful consideration. In my opinion, vast additional economy can be effected by further systematizing the work of selecting and conditioning of "order cars."

Another matter in connection with the classification of cars for commodity loading, which in my judgment should be given careful consideration, is the disposition that should be made of cars found unfit. It would, of course, be impractical to send all cars that are found to be unfit for high-class commodities to the repair tracks, but it appears to me that greater efforts can and should be made to put cars, with slight irregularities, in serviceable condition, than is now being done. The

general practice today, with some exceptions, is to allow cars with questionable irregularities to move along, with the thought that they will probably be used for loading some other commodity in the so-called rough class. Take for example a car inspected for flour loading, in which objectionable conditions are found, making cleaning necessary. Many such conditions can be remedied by a few hours labor, and it would seem that a carefully worked out plan to keep the better cars in condition for high-class commodities, with minimum expense, would result in improved utilization of cars and additional economy. Some roads have arranged a systematic program for washing the interior of dirty house cars, and inasmuch as this practice appears to produce highly satisfactory results, it would seem that more of this work should be done.

New Heavy-Duty Motor Car

FAIRMONT Railway Motors, Inc., Fairmont, Minn., has developed and placed on the market a new heavy-duty motor car which it has designated the A5 Extra Gang Car. With the use of trailers, the car can haul from 50 to 200 men, depending on the grades to be surmounted, thus making it available for large gangs on maintenance work, as well as for returning car riders to the hump in yard service. The car itself will seat 12 men and has a load capacity of 4,000 lb.

The car has a four-cylinder Continental Red Seal industrial motor, developing 17 hp. at 1,000 r.p.m. and 33 hp. at 2,500 r.p.m. A Brown-Lipe truck-type transmission is used, with a shaft drive to the rear axle, couplings being provided to compensate for difference in wheel levels. The transmission has three speeds forward and one in reverse, but the Fairmont reversible end drive, with which the car is equipped, enables it to run backward with the three forward speeds of the transmission, any of which may be used for regular working speeds, permitting economical operation with varying loads and on varying grades. A gear-driven water pump and large radiator, with a 17-in fan, are provided for cooling and permit the engine to develop full power continuously without overheating. A pressure-feed oiling system is installed and ball or roller bearings are used to reduce friction of rotating parts, there being seven ball bearings, four Bower, seven Timken and six Hyatt roller bearings in various parts of the car.

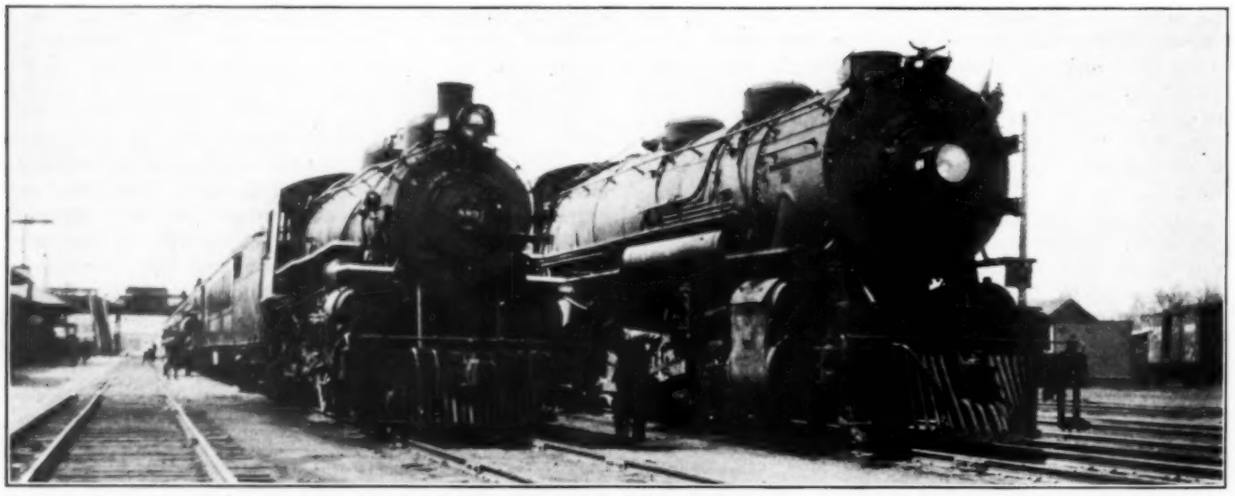
The frame is built of steel channels, securely cross braced, and the side sills of the deck are of white oak. Tool trays are provided on each side of the housing, which is hinged at the forward end so that it may be swung back to permit access to the power plant and transmission without disturbing articles in the trays. The forward part of the seat, together with the radiator guard can also be swung back to clear the spark plugs, fan and other parts. The entire deck assembly can be lifted from the frame without interfering with the control levers or other connections.

Safety rails are provided at each end of the seat and substantial maple foot guards, strongly braced, extend over the tops of the wheels. The brakes, which are applied to all four wheels, are controlled by a lever in front of the operator. Lifting handles extend across each end of the side sills of the deck and extension handles are furnished to ease the load when setting the car on or off the track.

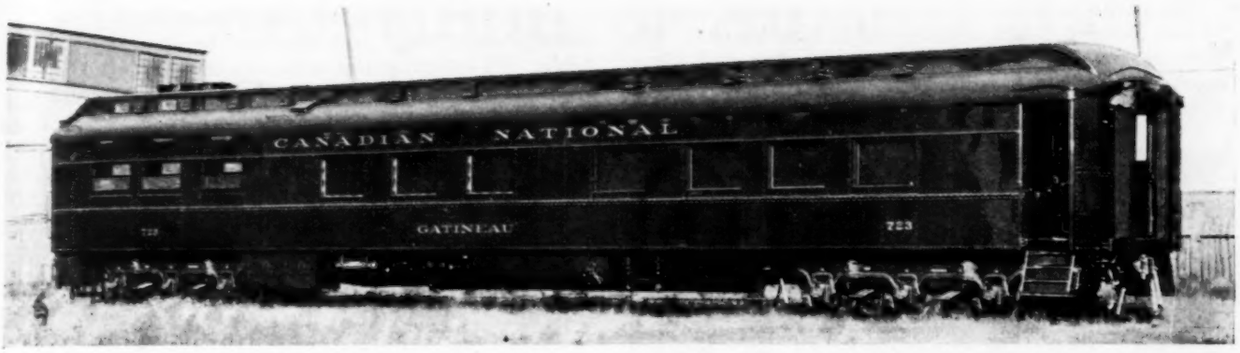
The Car Will Haul from 50 to 200 Men on Trailers

The car has a wheel base of 52 in., with 20-in. wheels. The axles run on Bower roller bearings, which are sealed to prevent the entrance of dirt and to retain the oil, and are fitted with thrust collars which can be adjusted easily. The car, with the chassis as described above, weighs 1,700 lb., but if desired, can be furnished with hump car or coach body, as well as with a longer wheel base.

* * * *



Rock Island and D. & R. G. W. Trains at Colorado Springs, Colo.



The Canadian National Cafe-Parlor Car

Cafe-Parlor Cars for the Canadian National

Used on trains which make frequent stops—Will accommodate 15 parlor passengers and seat 18 in the dining room

THE Canadian National operates many day trains that do not include in their equipment, parlor or dining cars for the reason that most of the passengers carried on these trains do not travel long distances. Some passengers, however, desire to ride in a parlor car and prefer to dine on the train rather than to wait until their destination is reached. The Canadian National has for years provided a combination parlor-cafe car for this class of service. Within the past few months, five new cars of this type, built by the Canadian Car & Foundry Company, have been put in service on the system.

The steel body of the car is carried on an underframe which consists of two side sills and a fish-belly center sill, tied together with two crossbearers and 18 transverse stiffners on each side of the center sill. The entire top surface of this frame is covered with plates 1/16 in. thick, riveted in place. This construction is for the purpose of supporting the car floor.

The car is carried on two Commonwealth six-wheel trucks which are equipped with straight equalizer beams and Miner inside side bearings. All of the 36-in. steel-tired wheels are fitted with clasp brakes. The trucks are fitted with McCord journal boxes. The outer surfaces of the trucks are ground to a smooth finish, given a coat of bronze-green paint and then varnished. This gives the trucks an attractive appearance and makes them easy to clean.

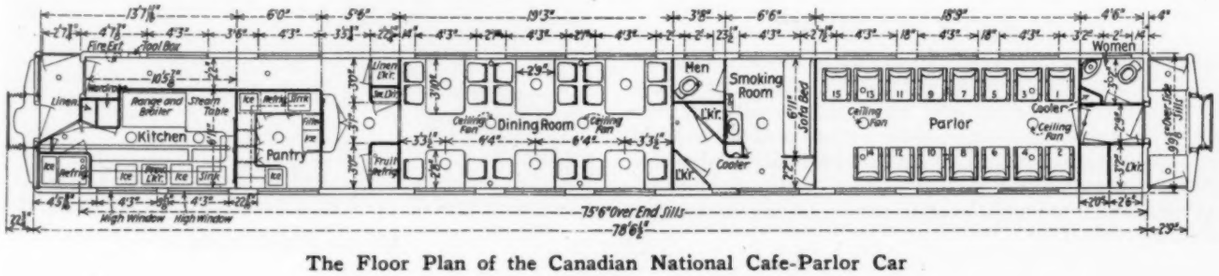
The car body is of the usual standard steel construction. The inside of the car is lined with three layers of hair felt up to the belt rail, two layers above the belt rail and one layer inside of the roof. The insulating material is covered with African figured mahogany wood. The ceiling, which is old English in effect, is surfaced with Agasote finished in cream-color with a very small stencil line around the outer edges of the panels.

There are ten square-topped storm windows on each side of the car. Polished plate glass is used in the windows, which are all screened.

There are two ceiling fans each, in the dining room and the parlor compartment, in addition to the five Utility ventilators in the dining room and six in the parlor section. There are also two Utility ventilators in the corridor alongside of the kitchen, two in the kitchen, one in the pantry and two in the foyer between the pantry and the dining room.

The Parlor Section

A parlor section, a men's smoking room, a dining room a foyer and a kitchen, are built into a car which is 75 ft. 6 in. over the end sills and 9 ft. 9⅝ in. over the side sills. A vestibule end construction equipped with two Edwards trap doors, is used at the parlor end of the car. The vestibule door leads into a passageway 2 ft. 9 in. wide and 4 ft. 6 in. long, on one side of which is the women's saloon and on the other side, two lockers. The women's wash room is fitted with a hopper, a washbowl, and a three-wing mirror. The window is fitted with a pantasote silk-faced curtain.



The Floor Plan of the Canadian National Cafe-Parlor Car

The parlor section, which is 18 ft. 9 in. long, contains 15 comfortable chairs upholstered in blue leather. The floor is covered with a combination blue and sand-color carpet, which is laid on Ozite carpet cushions. Foot rests are provided covered with material similar

How the Dining Room Will Appear in the New Canadian National Cafe-Parlor Cars

to the floor carpet. The side deck lights, ceiling fans and parcel racks are of statuary bronze finish. This section of the car is equipped for radio reception.

The Smoking Room

A swinging door leads from the parlor section into the men's smoking room. This room is trimmed and finished in the same style as the parlor section of the car. A sofa bed, 6 ft. 11 in. long, extends across the smoking room. This room contains a washbowl with a mirror over it, a water cooler, a sanitary towel container and a 9-in. fan. The hopper is enclosed in a separate room. The two windows are fitted with blue-tone pantasote curtains. A corridor, on each side of which is a triangular-shaped locker, leads from the smoking room into the dining room.

The Dining Room and Foyer

The dining room, which is 19 ft. 3 in. long, will seat 18 passengers. It contains six mahogany tables, three of which seat four persons each and the others, two persons each. The table tops and buffet cupboards are covered with Monel metal. The carpet is similar to that used in the parlor section of the car. All of the metal trim is of antique silver. In addition to the dome-type deck lights, side-wall candle fixtures are used. Parchment shades with hand-painted fruit designs are used on these fixtures.

The dining room leads into a foyer in which is located a buffet. A 14-in. by 38½-in. mirror is built into the buffet. The doors of the upper cupboards contain panelled glass. The foyer also contains the fruit refrigerator, the switch locker and a soiled-linen locker with a self-closing door.

The Pantry and Kitchen

A collapsible gate leads from the foyer into the pantry, which is 6 ft. long by 6 ft. 11 in. wide. It contains a cracked-ice container and water filter container, two ice wells, a sink and ample locked space and shelves. All flat surfaces are covered with Monel metal. It also contains a cup and plate warmer. The pantry floor is depressed and lined with copper sheets on which are laid wooden racks.

The kitchen is compact, but well equipped. It contains a coal range and charcoal broiler and a steam table. In front of the windows are two ice chests, a provision locker and a sink. A Bohn vitreous refrigerator, iced from the roof, is located at one end of the kitchen. Monel metal is used in the storage bins, sink and on all other flat surfaces in the kitchen. The kitchen is provided with Hurricane roof ventilators.

The upper part of the windows in the kitchen and pantry are provided with sliding sash and metal screens.

A water tank beneath the car, 26 in. in diameter by 96 in. in length, is connected to overhead tanks located in the pantry. An overhead hot-water tank, 15 in. in diameter, runs overhead the full length of the kitchen. The overhead water tanks in the kitchen and pantry are made of 16-gage copper.

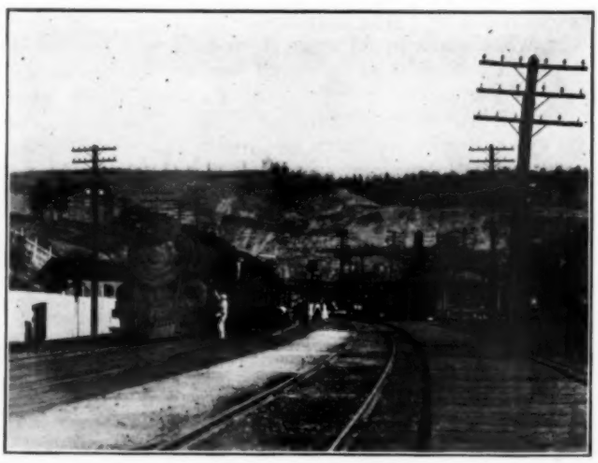
Fifteen Comfortable Chairs Are Provided in the Parlor Section

The floor of the kitchen, the passage ways and the saloons are covered with blue and sand-color rubber tiles, 1½ in. square by ¼ in. thick.

Miscellaneous Equipment

The cars are equipped with Miner draft and buffing gears and with Phillips 2-in. steam hose. Safety lighting fixtures and equipment are provided the generators being mounted on the trucks.

* * *



On the Pennsylvania

Co-ordination of Air and Rail Transportation

The New York Railroad Club again considers the progress of aviation at its annual dinner

WHEN the New York Railroad Club held its regular annual dinner in 1927 its membership was rather surprised—but quite enthusiastic—over the fact that the entire program was given over to a discussion of aviation possibilities in this country. Little reference was made at that time to air-rail transportation, although it was suggested that the railways would be wise to get in on the ground floor by carefully studying the possibilities of commercial aviation and protecting their interests by co-operating rather than competing with the new form of transportation. There was little or no thought at that time that commercial aviation would progress as rapidly as it has.

This year, at the annual dinner on December 13, in the Hotel Commodore, New York, the program was given over entirely to the possibilities of the co-ordination of air and rail transportation; indeed, much progress was shown to have already been made in that direction. C. M. Keys, president of the Transcontinental Air Transport, Inc., and also of the Curtiss Aeroplane & Motor Company, spoke on what the air-rail business means. Elisha Lee, vice-president of the Pennsylvania Railroad, discussed America's transportation of the future, while Charles C. Paulding, vice-president of the New York Central Lines, spoke on the co-ordination of air and rail transportation. Commander Charles E. Rosendahl, U. S. S. Dirigible Los Angeles, and also naval observer on the Graf Zeppelin on its western trip, told of his experiences and discussed the possibilities of lighter-than-air ships for trans-oceanic business.

Eliot Sumner, assistant to the general superintendent of motive power of the Pennsylvania and president of the New York Railroad Club, introduced George Le Boutillier, vice-president of the Pennsylvania, who acted as toastmaster.

The general committee in charge of the dinner was under the direction of T. R. Langan, northeastern transportation manager, Westinghouse Electric & Manufacturing Company, as general chairman, assisted by R. P. Cooley, eastern manager, Vapor Car Heating Company, as general vice-chairman. The following were chairmen of the various subcommittees: Dinner committee, W. J. Hedley, railway department, General Electric Company; publicity committee, George Flatow, publicity representative, Pennsylvania Railroad; entertainment committee, H. B. Gardner, assistant to vice-president, Westinghouse Air Brake Company; seating committee, H. M. Norris, secretary to president, Interborough Rapid Transit Company; reception committee, Arthur N. Dugan, vice-president, National Bearing Metals Corporation.

Co-ordination of Air and Rail Service

Elisha Lee indicated that combined rail and air passenger travel will be extensively used to cut approximately in half, transcontinental and other lengthy journeys. In addition, all-air routes will be opened from the large centers to practically every important point in the country for those whose necessities or tastes require the maximum speed possible. In closing he said, "I have no fear whatever for the future of the railroads. They will share in the increased prosperity which the development of air transport will bring, just as they have shared in the increased prosperity resulting from the development of the automobile."

Mr. Paulding closed his address with these words: "Co-ordination between air and rail service is here. It is an every day service. Air passengers in that service are few. We hope they will increase. We cannot doubt but that in the future we will see a great extension of the air service in connection with rail service and that this will be to the advantage of both. What we cannot tell is to what extent air service will be used, what improvements will be made in the planes themselves, particularly in the kind of fuel used and to be used, which will permit a larger number of passengers to be carried. When these improvements come, and they are coupled with some scientific means of overcoming the difficulties arising because of fog and other weather conditions, it is not difficult to foresee an extensive and useful future for the two services in connection with one another."

What the Air-Rail Business Means

Mr. Keyes spoke at some length on the problems involved in air-rail transport. Extracts from his address follow: "The Transcontinental Air Transport is now building and intends to operate a line between the Atlantic and the Pacific coasts with the Pennsylvania Railroad to Columbus as one link, and with the Santa Fe from Dodge City to Las Vegas, N. M., as another. The railroads are not even establishing new schedules, let alone building new lines or buying new equipment. This infant industry of the air is adapting one of its first great efforts to link up with existing services of two great railways. Keep that fact in mind and it may help you to ignore some of the bugaboos that you now imagine are lurking behind all the bushes along your rights-of-way.

"Some way or other my early training as railroad editor of the Wall Street Journal 20 years ago taught me that railroad transportation is the backbone of transportation, wherever transportation is carried on and nothing that has happened since has been able to shake that opinion. I have observed the municipalities, the states, the counties and the cities spending literally billions to lay down free highways for the movement of automobiles. I have observed the manufacture of these single units of transportation becoming one of the great major industries of the country. I have seen trucks and buses added to the transportation machinery of the United States, and now I see airplanes also added. None of these things seem to me to have any particular effect upon the railroads as a whole, except that I observe that year by year, not in spite of these new ele-

ments of transportation, but I believe actually because of them, the tonnage of the railroads has increased, the revenues of the railroads have increased, the traveling habit of the public has increased and the value of railroad stocks has increased decade by decade.

Railroads Need Not Fear

"I would be willing to lay a small bet that the railroads of the country make more money out of carrying supplies and material for the National Air Transport than they have lost through the carriage of air mail by that line, of which I am chairman, and that does not count the greatest of all factors that are involved in this swift transportation of men and of mail. Every measure that has ever been invented to accelerate communication between men has been, as it were, a cornerstone of business. There is an axiom of business that motion makes money and the faster the motion, the more money is made. The application of the airplane to commerce has simply again accelerated not only the communications between men, but also the movements of the men themselves from place to place, and that, if I am not mistaken, cannot help but be a tremendous producer of tonnage of all sorts for the railroads.

"Holding these views, as I have from the beginning of this art and still do, I have been at times shocked and at other times amused at the apparent fears expressed by railroad men concerning the growth of air transport. It always reminds me of the curious fear that an elephant has for a mouse, which may be based upon the idea in the elephant's mind that the mouse will some day grow up and devour him.

It took the Pennsylvania more than three years of study to determine that it was worth while to participate to the extent of ten per cent. in the Transcontinental Air Transport, and I think that nine-tenths of the larger railroads of the country are very anxious to see this experiment worked out to a conclusion, either good or bad, before they also become committed, even in a small way, to this form of transportation. That policy of watchful waiting seems to me very sensible and, while it has at times interfered with plans and projects in which I am deeply interested, both personally and as one of the leaders of aviation in the country, I cannot honestly criticize it, because I think it is exactly what I should do myself if I were so fortunate as to be the head of one of the great railroad systems of the country.

Why Co-ordinate Air and Rail Travel

"Air-rail transport of passengers is a thing in itself which will be permanent and important so far as the main trunk lines of the country, for instance, are concerned, will probably be not only more profitable, but also more important from a standpoint of volume, than will the all-air lines.

"This conclusion is based upon observation and experience. In Europe, there are very few lines upon which the traveller journeys more than eight hours at a stretch. In fact, there are very few important lines upon which he travels more than five hours in a day by air. There is no experience in air transport that indicates a great public demand, either in Europe or in America, for all-air transport extending over a 24 or 36-hour period.

"In part that is due to the fact that no facilities for such an expedition now exist and still in greater part it is due to the fact that to the present generation travel by air is an abnormal thing. It seems to be an upsetting of the laws of nature, more or less. Many men and women do not take to the air naturally without nervousness. It is quite clear that flying will be a much more simple and obvious thing to the coming generations than it is to this one, and of course it is in the coming generation that the future of aviation, like the future of everything, must lie.

"We are, therefore, establishing air-rail transportation as a permanent thing in itself, but we are at the same time hastening to install the more experimental service of an all-air line from Columbus to Los Angeles and San Francisco, because we believe that there will be a limited but steady demand for the fastest service that can be rendered between the two coasts. This service will arise from three different sources. First, the purely emergency traveller, to whom the mere arrival in the briefest possible time is more important than his own possible discomfort, nervousness, or wear and tear; second, the business messenger to whom time is exceedingly important and whose pursuit of wealth or whose immediate discharge of his duty outweighs all other considerations; and, third, the undoubted vogue that will grow up for this form of travel as a curiosity, a thrill or an adventure. I doubt that more than a very small percentage of the travellers by the all-air line will go over the whole line in one jump. Part of a day and a night, or part of a night and a day will probably be about the average length of passenger bookings on the day and night service by air.

The "Lindbergh Line"

"The air-rail line was and is the principal objective of the Transcontinental Air Transport—The Lindbergh Line. That company was put together on the basis of an estimated budget which indicated that it would need $3,000,000 capital for its foundation. We added $2,000,000 to it for unknown contingencies.

"Perhaps you will be interested in knowing, in very slight detail some of the elements of cost in laying down a modern, properly equipped airway in the United States. To begin with, it was necessary to locate first-class flying fields about 200 to 250 miles apart, because we contemplate that as about the economical unit from the standpoint of fuel and also believe that passengers should have an opportunity of getting out and looking around them at about that interval. We sent Colonel Lindbergh, and an associated group of engineers and pilots to locate proper fields at Columbus, Indianapolis, St. Louis, Kansas City, Wichita and some other points, and again on the long run from the end of a night run on the Santa Fe to Los Angeles. This turned out to mean Las Vegas, Gallup, Winslow, Kingman and Los Angeles.

"On top of this is the purchase of equipment. This again involved a number of tests in Los Angeles, Seattle, Detroit and New York of the available ships for this service. These tests could not be completed until September, because some of the planes were not flying until that month. The initial purchases of equipment, after these tests had been completed by Colonel Lindbergh, were about $1,000,000 and this will be considerably increased before full operations can begin.

"On top of this came the hardest problem of them all and one that involved the greatest element of time, as well as a very material element of expense. We laid down as fundamental in the first instance that there must be two factors in this operation which are not found in complete form in any other air transport operations in the country, namely, first, an intensive

meteorological service along the right-of-way and, second, a complete communications system along the ground and a complete communications system between the plane and the ground and between the ground and the plane.

"So far as meteorology is concerned, we started with the Weather Bureau. We cannot expect, however, that Uncle Sam will establish across a strip of the United States 100 miles wide and 2,000 miles long, a detailed weather service that will work at particular hours of the day for our benefit. In the establishing of this detailed weather service we have been enormously assisted by the two railroads—the Pennsylvania and the Santa Fe. We have drawn upon the Weather Bureau for personnel, both at the top and down the line of employment. We have drawn upon the records of the Weather Bureau for 50 years past in making due allowance for prevailing winds, for fog, bad air conditions, et cetera, at every point along this right-of-way.

"The communications system also entailed elements new and old. The land communication is, of course, by telephone and telegraph and here again the railways cooperate as far as they properly can, but in the main we rest upon our own resources, drawing upon the American Telephone and Telegraph Company and the telegraph lines for our facilities. This is more or less routine, being merely a draft upon things already well established.

"The radio communication consists of two elements: First, the radio direction installation and, second, radio communication both ways. The directional radio has been worked out in close cooperation between the Government and the radio companies, and this installation, which will give to the pilot his general location at all times while in the air, both by day and by night, is more or less standardized, being in use on many of the air mail lines of the country.

"The actual audible communication between the plane and the ground and the ground and the plane is number one factor of safety in passenger transport. It is the block signal system of the air. An air transport passenger line without it will be illegal a few years from now. All the weather information collected by the meteorological system must be transmitted from the ground to the plane and must be transmitted instantaneously and continuously. That again, is not so difficult. For a time it looked as though that was all we were going to be able to have, because our first figures on the installation of transmitting equipment in the plane itself indicated that we might have to sacrifice capacity for two passengers in order to take care of the weight of this system. Intensive research has been carried on by the radio companies for the past six months and as a result we are now promised definite installation in the plane at a weight that is more or less negligible, so that our pilots can communicate instantaneously and at all times with the ground stations to ask additional weather inofrmation, with velocities et cetera.

"What does air-rail transport mean to the connecting railroads and what does it mean to commerce of the United States? I think most railroad men who have gone into the subject believe that the acceleration of business men and even of tourists throughout the United States means the acceleration of business, and that acceleration of business means a larger turnover of money and of credit and of goods, and they translate that acceleration of turnover to mean an inevitable increase of tonnage and travel of all sorts by the railroads and by every other means of transportation.

"We know that in the course of time the air transport passenger line will not be a link between any two particular railroads, or any three or four, but will be simply a link between centers of population, linking up the traffic that comes into these centers and originates in them, no matter from what sources that traffic comes. This is the railway conception of air-rail traffic and it is also my conception and the conception of all those who joined with me in pioneering this adventure."

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading during the week ended December 8 amounted to 984,352 cars, an increase of 84,566 cars over the total in the preceding week, when loading fell off due to the Thanksgiving holiday. The week's total represented an increase of 106,676 cars over the corresponding week of last year and of 8,103 cars as compared with the corresponding week of 1926. The corresponding week of last year included the Thanksgiving holiday. Loading of all commodities and in all districts was larger than a year ago for that reason. Loading of grain, ore, less-than-carload and miscellaneous freight was larger than in the corresponding week of 1926. Loading in all western districts was slightly larger than two years ago but other district totals showed decreases. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

Revenue Freight Car Loading

Week ended Saturday, December 8, 1928

Districts	1928	1927	1926
Eastern	216,936	194,261	219,260
Allegheny	200,423	173,113	203,671
Pocahontas	57,856	46,390	61,447
Southern	154,259	143,686	162,694
Northwestern	115,244	100,682	113,602
Central Western	152,044	142,593	147,331
Southwestern	87,590	76,951	84,450
Total Western Districts	354,878	320,226	345,383
Total All Roads	984,352	877,676	992,455
Commodities			
Grain and Grain Products	56,719	44,234	45,673
Live Stock	33,697	31,779	34,144
Coal	199,090	172,427	237,433
Coke	10,706	9,666	11,991
Forest Products	63,443	56,913	63,563
Ore	11,193	8,118	10,068
Merchandise L. C. L.	255,875	246,657	253,827
Miscellaneous	353,629	307,882	335,756
December 8	984,352	877,676	992,455
December 1	899,786	918,487	1,051,219
November 24	1,028,690	840,642	937,844
November 17	1,059,701	968,052	1,071,707
November 10	1,053,295	975,134	1,106,889
Cumulative total, 49 weeks	49,047,091	49,256,692	50,650,102

The freight car surplus averaged 222,539 cars during the period ended November 30, as compared with 194,092 cars on November 23. The total included 104,272 box cars, 75,799 coal cars, 23,240 stock cars and 8,980 refrigerator cars. For the period ended December 8, the surplus averaged 256,995 cars, including 97,347 coal cars and 115,927 box cars.

Car Loading in Canada

Revenue car loadings at stations in Canada in the week ended December 8 totalled 75,359 cars, a decrease from the previous week of 8,866 cars and an increase of 8,641 cars over the same week last year.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada		
December 8, 1928	75,359	41,180
December 1, 1928	84,225	39,834
November 24, 1928	85,970	40,380
December 10, 1927	66,718	34,030
Cumulative Totals for Canada		
December 8, 1928	3,519,866	1,942,333
December 10, 1927	3,215,880	1,821,259
December 11, 1926	3,092,710	1,834,187

Passenger Express Refrigerator Cars

THERE has been a steady growth in the handling of perishable freight by express in refrigerator cars in the last few years, and every evidence points to a continued increase in this movement, because the accelerated service permits fruits or vegetables to arrive at their destination in better condition. The American Railway Express Company was the leader in providing larger and more suitable equipment to handle this traffic. At its suggestion, the General American Car Company has built and is the owner of several hundred new passenger-refrigerator cars which are leased directly to the railroads. Among them are 100 new cars for the Missouri Pacific, one of which is illustrated.

The car is built according to the specifications of the American Railway Express Company. It is 53 ft. 6 in. long over the buffers, equipped with an unusually heavy steel underframe, Commonwealth one-piece cast steel truck frames with integral pedestals, rolled-steel wheels, high-speed passenger brakes, steam and air signal connections, and effective insulation.

Special Features

Among the special features of the car is the provision of collapsible, hinged metal bulkheads that can be opened for the easy cleaning of ice out of the bunkers and which also permit the use of the full length of the car for dry express matter, parcels post or storage mail. The ice bunkers, with a capacity of 317 cu. ft., will accommodate 11,700 lb. of ice, which is the largest capacity of any bunkers constructed up to this time and insures a long haul with a single icing. The cars are unusually well insulated, having heavy cork floors with hairfelt and other modern types of insulation in the walls, ends and roof.

The several hundred cars of this type owned by the General American Car Company are now leased to railroad companies because they represent a type of equipment that lends itself to pool operations by the express company rather than to individual railroad ownership. The fruit and vegetable season on most railroads is short and does not justify ownership of this type of car by individual railroads. The movement of these and other passenger-refrigerator cars, covers the entire United States and is another step in the broadening out of markets for fruit and vegetable growers throughout the country.

Chipping of Monuments—Granite and Other

GEORGE B. Elliott, president of the Atlantic Coast Line, speaking before the Southeast Shippers' Advisory board at Jacksonville, Fla., on December 7, and forcefully setting forth the mutuality of interest which should lead shippers to demand efficient service as more important than extremely low rates, sketched the history of country-wide rate making since the passage of the Transportation Act of 1920, and in his review said:

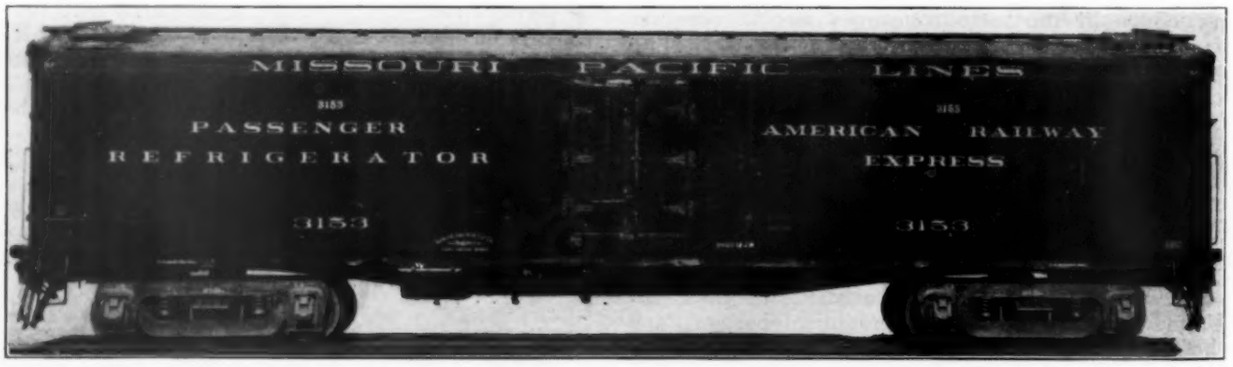
Rate Structure Contemplated Fair Play

The rate structure erected by the commission in 1920, under the instructions of congress to grant rates that would produce a reasonable return upon investment, was a monument commemorating the determination of the country to see that its railroads got fair play. But look at the monument now!

I am reminded of an incident that impressed me greatly some years ago. As a boy I visited at Blue Ridge Summit, located on the line between Maryland and Pennsylvania, where, wandering through the woods, I came across an imposing shaft of granite, standing amidst some trees. It was a monument erected to mark Mason and Dixon's line, the line surveyed by Mason and Dixon to establish the division between Maryland and Pennsylvania; between, at that time, the free states and the slave states; between the North and the South.

As I recall it, I think the shaft was, at that time, probably six feet high. On my next visit to the scene perhaps twenty years later, I drove to the point nearest the monument with my wife and we went into the woods to look at it. What was my surprise to see, in place of the imposing six-foot shaft, a little stub of granite, not over six inches high, protected by an iron cage. What had happened? Nothing much—except the American souvenir hunter. Apparently each man that had viewed the monument had thought to himself: 'It will be interesting if I chip off a little piece of this and take it home as a souvenir'—and so they began their chipping. *** The rate structure of 1920, which was designed to furnish a fair return to the railroads, has been chipped at by the great American public, each man thinking that his little chip would not really affect the general structure—each man desiring a little piece as a souvenir for his own business—and none of them thinking that the marker erected by the government, as a pledge of fair play, would ultimately be destroyed and the promise defeated. It is fast disappearing and unless public opinion steps in and protects it, it, too will disappear, a victim to the desire of the individual to have his souvenir, let it cost the country what it will.

The process by which this chipping away has been accomplished began in 1922, by a reduction of 10 per cent accepted by the railroads, in favor of agricultural products. This was followed within the year by a horizontal cut of equal amount in favor of all other products. *** The Traffic World shows that the commission set for hearing from January 1 to December 3, 1928 approximately 2,000 cases. The total of reductions obtained has reached an enormous total. ***



New Passenger-Refrigerator Built by the General American Car Company for Service on the Missouri Pacific

"There Is No Reason Why Maintenance Work Cannot Be Carried On Throughout the Year"

A Needed Reform in Conducting Maintenance of Way*

Employment of uniform force throughout the year would benefit both managements and men

By Charles A. Morse
Chief Engineer, Chicago, Rock Island & Pacific

I WAS surprised to note a newspaper report of the address of President Green, at the recent convention of the American Federation of Labor, which quoted him as being opposed to the introduction of labor-saving machinery, for I had the impression that the federation recognized that the reason why wages could be maintained at so much higher levels in the United States than in other countries was the greater use of such machinery. To insist that our American men and women should continue to be common laborers is unfair to them. The introduction of labor-saving machinery has raised at least half of those who were once common laborers to less arduous positions, with higher wages and improved standards of living.

New Industries Take Surplus

We have only to look back a few years to realize what has been done to provide employment for those who have been displaced by the introduction of labor-saving machinery. If we consider the number of people who have been employed in the manufacture of gas-driven vehicles and accessories in the last 20 years we will see where a large number of the people displaced by labor-saving machinery in other industries have found employment. We have only to look back about five years to see that the same thing has taken place in the radio industry.

In railroad circles we find this same objection raised occasionally by train and engine men, it being their contention that the increase in the size and tractive power of locomotives has thrown men out of employment. The fact is, however, that the increase in the business handled by our railroads has been greater in proportion than the increase in the power of our locomotives, and that while, for the time being, the introduction of heavier locomotives displaces train and engine men on a particular engine district, it does not reduce the total number of men employed in that class of work.

On the Rock Island during the last 20 years there has been an increase of 113 in the number of locomotives in road service and of 195 in the total number of locomotives, in spite of an increase of 61 per cent in the average tractive power of road locomotives. The increase in gross tons handled in the 20 years was 97 per cent, while the total train miles increased 11 per cent. From these figures, which are probably representative of the railroads in the West, it will be noted that the increase in business during the last 20 years, notwithstanding the falling off in passenger business during the latter half of this period, has been such as to require an increased number of locomotives, irrespective of the fact that the size of the locomotives, as reflected in their tractive power, has increased over 60 per cent.

A careful analysis of the ultimate results of the introduction of labor-saving machinery will show, as with train and engine crews, that the increase in business and the development of new industries is such that no hardship, other than temporary unemployment, results from the introduction of mechanical devices or from the improvement of mechanical devices already in use.

What we should all try to do is to exert our best efforts toward providing *continuous* employment for all who *want to work*. There is, unfortunately, a certain percentage of people who do not want to work if they can avoid it, and when we see statements of the number of unemployed, it always includes these people who do not want to work, or care to work only just enough to get by.

President-elect Hoover has just placed a proposition before the Association of State Governors in which he suggests the holding in reserve of a certain

* Abstracted from a paper presented before the Western Society of Engineers, Chicago, on November 26.

percentage of our public improvement program so that when there is a slacking up in other work this public improvement work can be undertaken and help to take up the slack due to depression in private business, giving employment not only to labor on the improvements themselves, but making work for the steel and woodworking mills, cement plants, stone quarries, and other industries that furnish supplies used on these public improvements. This suggestion is in accord with sound economics, but it will require the arousing of public sentiment to put it into effect.

In railway work, there is one serious obstacle to any efforts to employ uniform forces. That is, the habit of persons interested in railway securities, of comparing earnings statements from month to month and of one month with that of the same month of a previous year. This imposes great pressure on railway officers to make a showing each month as compared with the same month a year earlier. Aside from this condition, there is no reason why maintenance work cannot be carried on throughout the year with practically a uniform force, especially as far as track, bridge and building, water service and signal gangs are concerned; all that is required is to eliminate for one year the monthly comparisons of net earnings with the corresponding months of the previous year and to inaugurate a thorough program of work throughout the year with the object of maintaining uniform forces among the various groups referred to above. Also, much of the extra-gang work that is now confined to the summer months, can be performed in the winter. This would tend to keep the same number of men in extra gangs through the year.

The great strides that have been made in the introduction of mechanical equipment since the World War, have reduced the labor requirements of the railroads to such an extent that there is now no reason why the forces now required in the regular organizations should not be given the advantage of continuous employment. If this were done, it would have the effect of putting all of this force in a position to lay up something for old age or sickness, and in addition, it would cause them to value their jobs.

A Graduated Wage Scale

If, in addition to an arrangement for steady and permanent employment, a graduate scale of wages for trackmen could be inaugurated, so that when a new man unfamiliar with the work is employed, he would receive a lower wage than the average, while the men older in years of employment, could receive a bigger wage than the average, we should have an ideal arrangement, as there would be an advancement in wages with longer service which would provide an inducement for men to remain in the service. Under the present plan, with a flat wage paid to all trackmen regardless of their skill or familarity with the work, there is no inducement but seniority to encourage trackmen to give continuous and dependable service. In the bridge and building, water service and signal gangs there is, of course, a variation in wages for different men in the gang.

Unfortunately, trackmen have always been classed as common laborers, no change being made as track work has become more complicated with the advent of tie plates, anti-creepers, ballast, etc., and with the introduction of various mechanical devices such as track jacks, lining and tamping machines, etc.

The employees are the main stay in maintaining and operating a railroad, and their welfare should be one of the first considerations of a railroad management. If you can keep them happy and contented, you will go a long way toward obtaining economical and efficient operation, as the men will be interested in the success of their company.

The first step toward continuous employment, for 90 per cent of the railroad employees, is a movement to get the investors in railroad stocks to understand that such a movement will mean that for one year the net earnings of the railroads will not be comparable, month by month, with those of the previous year, but will result in a decrease in net earnings during the winter months, followed by an increase in net earnings for most of the other months. On western railroads this will mean an increase, particularly, for the months of July to November, inclusive.

My idea is that a 300-day working year should be the object in view. If this can be brought about, it will mean that these men will be in a position to plan their expenditures and save something each year to provide for sickness and for old age. If the employees of our railroads could save 33⅓ cents for each of the 300 working days per year, they would accumulate $100 per year. If this were invested in one share of six per cent stock of their railroad, and the earnings applied to the purchase of more shares, a man starting in at the age of 20 and working continually until he reached a retiring age of 70 years would upon retirement, have an annual income of over $100 per month. If this plan were carried out by two-thirds of of railroad employees, they and their families (if they kept the stock that they purchased), would at the end of 50 years own a majority of the stock of all the railroads of the country. This would mean that they would be represented on the boards of directors within 10 to 15 years and would by the end of 50 years *control* the railroads on which they were employed. This would be an ideal situation. Employees' stock ownership and control are being gradually worked out in some of our large industries and there is no reason why this cannot be successfully effected in the railroad industry, which is the greatest industrial enterprise in the country.

It is interesting, in connection with a study of the savings made possible by the use of mechanical devices, to see what has been done in the way of reducing the number of employees required during the last 20 years. On the Rock Island, the number of employees has been as follows:

In 1907 there were 38,250 employees
In 1915 there were 37,973 employees
In 1923 there were 37,283 employees
In 1927 there were 36,658 employees

This indicates a reduction in the 20 years between 1907 and 1927, of 1,592 employees, with an increase of 272 miles of railroad operated and an increase of 97 per cent in freight business. This has occurred, notwithstanding the fact that since 1913 there has been a decided increase in the accounting department employees because of railroad valuation and the necessity for making numerous annual reports in connection therewith.

The introduction of mechanical devices has been especially large since 1921 and 1922. The effect of this is shown by comparing the decreases in the number of employees per year for different periods. Between 1907 and 1915 the average decrease was 31 employees per year; between 1915 and 1923 it was 86 employees per year, while between 1923 and 1927, inclusive, it averaged 125 employees per year.

Budgets Modernize Railway Purchasing

*New method of controlling expenditures for material has proved sound on Milwaukee**

By D. C. Curtis
Chief Purchasing Officer, C. M., St. P. & P.

TIMES change and we either change with them or perish. We are passing through a period not only of improvements in present methods in the railroad machine, but of radical changes in the fundamentals of the transportation problem. Thousands of miles of concrete roads are being built each year. The airplane is an established fact. A few years ago, new patents, processes and methods were the result largely of individual efforts. Now problems have become so complex that laboratories with extensive equipment and highly trained technical men are requested, with a large financial outlay, for the investigations necessary to develop patents, processes and methods.

Only a few years ago, a master mechanic was also superintendent of motive power, purchasing agent, storekeeper, shop foreman, labor agent, and in some cases, he also looked after part of the maintenance of way work. A locomotive was a comparatively simple machine, composed of the Stevenson valve gear, a boiler, fire box, bell, whistle and running gear. Compare the above with the locomotive of today with its superheater, feedwater heaters, three or four different sets of air brakes, electric lights, air bell ringers, symphonic whistle, multiple valve throttle, force-feed lubricators, and complicated valve gears.

In a Railway Storehouse

Supply Problems More Complex

Today it is necessary to carry upwards of 50,000 different items of material on a Class I railroad. No man or set of men can now visualize and mentally calculate the quantities of the different items of material necessary to maintain efficient operation of our complicated transportation machine. There is required an orderly and systematic arrangement of the materials in the storehouses, a stock record that is checked periodically by an expert in the particular branch of the service for which the materials are used, information as to the quantities on hand, used, for which orders, are held, and the conditions under which they must be used. On a Class I railroad, the purchasing and stores departments must handle about 300 purchase orders daily to supply the needs, and this does not resolve itself into the old problem of picking each one of these items off a shelf, taking it next door and using it. Rather, the needs must be anticipated and the orders placed 30, 60, 90 days, and in some cases further ahead of the time that the material is going to be used. It takes time to check stock, to work up the information necessary for placing an order for the proper quantity. The purchasing department is forced by the large amount of competition in the industries, to send out its inquiries for prices to all interested manufacturers, jobbers and merchants who demand a place on the inquiry list. Bids from these people must be tabulated and decisions made as to placing the orders. The orders must be drawn, the manufacturers must make the materials, ship them and they must then be distributed over many miles of railroad. Any road that tries to do this work without intelligent supervision is wasting large sums of money although they may be so hidden as never to become exposed to the limelight.

Precedents for Purchase Budget

We have found in our private life that we are much more able to spend our income for the things that give us the most benefit, by putting into effect a budget plan. The manufacturer would not think of operating without budgeting the amount of money necessary for materials, labor, sales, etc. He must know his costs before he starts manufacturing, if he is going to meet competition and market at a profit. The National Government has been able to effect great economies in its administration by budgets. Yet when the subject of a budget or allotment for purchasing materials on a railroad is mentioned, people say "It can't be done."

An analysis of special reports received by the Bureau of Railway Economics from the Class I roads indicates that a total of $1,395,928,000 was spent by these roads in 1927 for fuel, materials and supplies. Comparative

* From an address before the New England Railway Club, Boston, December 10, 1928.

figures of railway purchases made directly by the roads for the last five years are shown below:

1923	$1,738,703,000
1924	1,343,055,000
1925	1,392,043,000
1926	1,559,032,000
1927	1,395,928,000

The variation from year to year in the total purchases is not so great that it cannot be analyzed, budgeted, supervised and controlled.

Advance Preparation

It should be borne in mind that at the present time, somebody must prepare for the material used, 30, 60, 90 or more days in advance. When a carpenter comes to the storehouse for a piece of lumber, somebody has had to see that it was ordered, purchased, transported and put in stock. The same is true when the mechanic from the shop gets a valve or a casting in the storehouse, and when the signal maintainer wants a relay, a roll of wire, a lens or any part for the signal. If this were not done, the material would not be available.

But this budgeting has been done only as to quantities and not on a dollar and cents basis. It is not impracticable, nor does it require extensive clerical work to reduce quantities to dollars and cents, and after reducing them to this basis, to present this information to the proper officers of the railroad, as in preparing budgets for labor. The money can then be controlled as to time and amount to be spent, so that expenditures will be within the income of the road, unnecessary interest and carrying charges avoided and the necessary material for the various labor forces furnished.

At the close of last year, the railroads of the United States compiled for the Bureau of Economics, detailed information as to their expenditures for material and supplies. If it is possible to furnish this information afterward, it is just as possible to prepare an estimate or an allotment or budget 30, 60, 90 days ahead of the time the money is to be spent, to enable some one in authority to regulate these large expenditures before they are made.

Must Know Value to Control

If the expenditures for materials and supplies are to be controlled, they must be made known in dollars and cents in advance. Who would not like to have the interest at even the lowest rates, on $1,395,928,000 for 30 days? It is also well established that it costs at least 15 per cent to carry material in store stock. In addition, material received before it is needed requires extra handling and extra handling always increases the cost without increasing the value. It is important to keep before foremen, master mechanics, roadmasters, signal maintainers, superintendents, and bridge foremen, the value in dollars and cents of the materials they are using; the proper time to get those values before them is before the money is spent and not after.

These reasons, and many others, convinced the writer that a budget or allotment plan was necessary for the proper control of the large amount of money in materials and supplies, and its development on the Milwaukee road was undertaken in 1922. A storekeeper was asked to take his stock books, reduce the quantities that he expected to order during the next 30 days to dollars and cents and divide them into the classes in which the various departments were interested. In the A. R. A. classification of material used on the Milwaukee, the first ten classes pertain to maintenance of way and structural material. Class 11 to 40 to maintenance of equipment, while Classes 41 to 50 pertain to material common to all departments, but are arranged so as to be easily classified with the major items affecting the allotment for the various departments.

This storekeeper was then directed to go to the various department heads with the quantities expressed in dollars and cents. To roadmasters, he stated that, according to his record, he was anticipating ordering so many thousand dollars worth of switches, guard rails, bolts, spikes, tie plates, etc., and that this amount of money was based on what had been provided during the 30, 60 or 90 days of the previous year, for the period covered. He asked the roadmaster what changes, if any, he intended to make over that period, in comparison with previous periods, and what new work or curtailment of work he was expecting during the next 30 days and if the amount of money planned would satisfy his requirements, if invested in those materials.

The storekeeper then went to the bridge and signal foremen, master mechanics, car foremen and others using material on his division, and requested their advice as to the amount of money he was going to ask be expended for materials for their use. This plan was found to be so practical, and the results were so beneficial, that it was extended to all divisions.

The Milwaukee's Budget

Each division storekeeper now compiles the information for each division, and forwards it to the district storekeeper, where it is consolidated and forwarded to the general storekeeper. The general storekeeper consolidates it and sends it to the chief purchasing officer. The chief purchasing officer, knowing the policies of the company, its financial condition and the prospects for continued income, either approves, reduces or increases the amounts shown by the general storekeeper, and gives him authority to place requisitions on the purchasing agent up to the amount of the allotment during the next 30 days.

A progressive record is then kept by each storekeeper and by the general storekeeper, to see that the amount of money authorized by the budget is not exceeded on his requisitions for the various materials for that month, and in cases where he finds it necessary to have more money, he appeals to the chief purchasing officer for additional authority before placing additional requisitions. The following report from a division storekeeper, dated October 8, shows how close allotments are followed:

Month	Allotment	Spent
September	$16,300	$15,764
October	12,500	11,877
November	12,000	12,280
December	12,000	11,986
January	17,000	16,976
February	15,000	14,933
March	21,200	21,195
April	17,810	17,809
May	16,300	16,067
June	11,650	11,470
July	18,000	17,996
August	16,500	16,100
September	19,000	19,003

A statement showing, by percentages, the variations we have met in allotments for maintenance materials and the requisitions against the allotments and the similar record for the A. F. E. material allotments and requisitions against the A. F. E. allotments, together with the estimated invoices to be passed and the actual invoices passed, is as follows:

	Last Month Sept., 1928 Per cent	Second Preceding Month August, 1928 Per cent	Last Year's Oct., 1927 Per cent
Maintenance Material Allotment..	100	100	100
Requisitions Against Allotment...	91	94	103

A. F. E. Material Allotment.....	100	100	100
Requisitions Against Allotment..	87	130	83
Estimated Invoices to be Passed.	100	100	100
Actual Invoices Passed.....	97	102	113

In addition, the chief purchasing officer furnishes the vice-president in charge of finances, with a monthly statement showing the amount in invoices sent to the auditor of expenditures for payment for each of several months in the previous year, together with the estimates for the corresponding months of the ensuing year, divided in each case among the major classes of purchases. The differences on this statement between the actual and the estimate for the last three months have varied as follows:

August	2 per cent over
September	3 per cent under
October	1 per cent under

From the above, it is readily to be seen that we are able to operate a budget or allotment plan of purchasing successfully, and to control the amount of money we wish to put into materials and supplies.

Value of Purchase Budgets Many

The Milwaukee has made remarkable savings in the handling of material by the installation of tractors, cranes, lift trucks, trailers, skids, conveyors, etc. The lift truck, with skids and containers, is going to change methods of handling commodities, in the very near future, and one of the principal reasons for the progress made in handling methods thus far, is the keeping of savings on a dollars and cents basis, and the budget method of control.

The ethics of the average employe of the railroad are such that when he takes material for his personal use, he does not consider it stealing. This same employe would not think of going into a store and taking some material home for his use without paying for it, but material upon a big railroad is found in such quantities that to the employes, it is looked upon as something without dollars and cents value. The loss from this state of mind may be very large. For instance, if a grab iron is bent, why should the car repairer straighten the old grab iron and use it over again? There is a pile of them staring him in the face and no money is necessary to get one of them and use it. Bronze gears on a stoker may be worn and all that is necessary is for the machinist to go to the storehouse and get a new one, but if he is told he is carrying away $40 and he knows that the old gear can be repaired for $4, the effect is entirely different.

Employee Education Necessary

Practically all the employees of the railroads are interested in their economical operation, and where there is waste or improper use of material, it is practically always done through ignorance. If we are to teach employees the economical use of material, we must keep before them its value in dollars and cents. By using the budget and allotment system, we are forcing the storekeeper, the foreman and supervisors to realize that material is dollars and cents.

The budget method not only saves carrying charges and reduces the quantities it is necessary to purchase, but it makes business men out of employes, giving them a knowledge of finance that will help protect sadly neglected dividends caused by the ever increasing demands, regulations, taxes and mounting costs of all sorts that are imposed upon the railroad by forces beyond their control.

Motor Cars Embody New Features

TWO motor cars recently placed on the market by the Kalamazoo Railway Supply Company of Kalamazoo, Mich., embody features that are distinctive in this class of equipment. One of these is a section motor car, known as the Kalamazoo No. 22

The No. 216L Inspection Car

which is equipped with a two-cylinder, four-cycle, water-cooled engine of the automobile type. Automobile practice is carried even further by the introduction of a selective gear transmission, providing for the standard three speeds forward and one reverse. The engine also is provided with a sheet-metal hood, and instead of being placed under the seat, as in ordinary practice, it is mounted at the forward end of the car, thereby concentrating such a large part of the weight of the car (1,125 lb.) over that axle, that it is said that one man can readily lift the rear axle off the rails and remove the car from the track. The seat is provided with a special extension to the left at its forward end

The Operator Has a Special Seat on the No. 22 Car

to serve as a special seat for the operator, where he has convenient access to the ignition switch, throttle, clutch pedal, gear-shift lever and brake handle. The car has a maximum forward speed of 35 m.p.h. and a maximum speed in reverse of about 15 m.p.h.

The other new car introduced by the Kalamazoo Company, is known as the Kalamazoo 216L inspection car, which comprises an improvement over an earlier

model, the 16L. This car has a one-cylinder, two-cycle engine with 3½-in. bore and 4-in. stroke, but unlike many small cars with two-cycle engines, the engine is free running, having a multiple-disc clutch between the engine shaft and the sprocket wheel for the chain drive. The car will travel at speeds ranging from 3 to 35 m.p.h. in either direction. This car will seat three men, but its weight of 423 lb. is so balanced that it can easily be taken off the track by one man.

Investigation of Container Cars Ordered

WASHINGTON, D. C.

A GENERAL investigation of the use of "container" cars has been ordered by the Interstate Commerce Commission, following protests received by the commission against a tariff filed by the Missouri Pacific containing rates on merchandise loaded in containers between St. Louis, Mo., and various points.

The commission had suspended the Missouri Pacific tariff and had ordered an investigation of its legality in Investigation and Suspension Docket No. 3198. On December 13 it made public an order dated December 3 referring to the Missouri Pacific proceeding and stating that "the matter of container cars and the use thereof being of primary and increasing importance to the shipping public and to the carriers", it had decided to order an investigation "into the rates, charges, rules, regulations and practices of common carriers by railroad subject to the interstate commerce act incident to the use of such equipment."

Scope of Investigation

The investigation is to include, according to the order, "a full inquiry into the ownership, operation, use, management or other enjoyment of such facilities, the history of the service to date, the rates charged or to be charged for this service, the character and complete operation of the service, any contractual arrangements, express or implied, with persons, firms, or corporations, which have any bearing upon or affect in any manner the charges paid by the shipping public or the revenue received by the carriers using, or proposing to use containers, and any and all information germane to the subject matter of the inquiry, in so far as it relates to interstate or foreign commerce."

This is to be "with a view of determining whether the present rates, charges, rules, regulations and practices of respondents or any of them are just, reasonable, or in any respect in violation of law and of making such findings or orders in the premises and prescribing such just, reasonable and lawful rates, charges, rules, regulations and practices, and taking such other and further action, as the facts and circumstances may appear to warrant."

Hearing on February 6

The order was served upon all Class I railroads and upon the Mississippi-Warrior Service, Transmarine Lines (Canal Division), American Barge Line Company, Westwego Petroleum Barge Line, Inc., Marrero Barge Line, Inc., Coastwise Steamship & Barge Company and Chesley Tug & Barge Company. The proceeding was assigned for hearing, along with I. & S. No. 3198, at Washington on February 6 before Commissioner Porter and Examiner Ames.

I.C.C. Approves Accrual Plan of Pension Accounting

WASHINGTON, D. C.

THE Interstate Commerce Commission, after much discussion of the subject, has adopted a provision in its uniform system of accounts for the adoption of the accrual plan of making charges to operating expenses and credits to a reserve account for the contractual payment of pensions to employees regularly retired for superannuation or disability. The plan is to apply, however, only to those carriers which definitely undertake by contract to pay pensions and establish a fund to be held in trust for such purposes, and may be made effective as of the date, not earlier than January 1, 1928, on which the carrier makes effective its definite contractual obligation to pay such pensions.

Heretofore the commission has allowed charges to operating expenses for pensions only as actually paid, but the railroads have been urging for several years provision for setting up pension reserves to represent their accrued liability and the matter has been the subject of conference and correspondence between the commission's accounting bureau and the Railway Accounting Officers' Association as well as representatives of individual roads.

The commission has adhered to the position, however, that it could not approve charges to operating expenses when there is no definite assurance that the money will eventually be used for the purpose intended and has insisted upon a contractual obligation for pension payments as a prerequisite.

The commission on December 17 made public an order dated as having been adopted on November 23 that the following instructions be prescribed as a note following the text under accounts 457, "Pensions":

Note. If the carrier has definitely undertaken by contract to pay pensions to employees when regularly retired for superannuation and/or disability and has established a fund to be held in trust for such pension purposes, it shall charge to this account monthly amounts determined through the application of equitable actuarial factors to the current payrolls, which, together with interest accruals on the trust funds, will as nearly as may be, provide for the payment of such pensions, or for the purchase of annuities corresponding thereto. The amounts so charged shall be concurrently credited to a reserve account under account 769, "Liability for provident funds." The amounts accrued in each year shall correspond to the aggregate of the amounts paid into the trust fund and expended directly by the carrier for pensions or annuities during the year. The carrier shall maintain a complete record of the actuarial computations through which the accrual each month of its pension liabilities is established.

Upon the adoption of the accrual plan of accounting, pension payments to employees retired before the adoption of such plan shall be charged to an existing pension reserve or to profit and loss.

Before adopting the accrual plan of accounting for pensions the carrier shall inform the Commission of the details of its pension plan giving full statement of the facts which in its judgment establishes a contractual obligation for pension payments together with the actuarial formula under which it proposes to create its pension trust fund, and also a copy of the declaration of trust under which the fund is established.

No charge to this account shall be made in anticipation of discretionary pension payments in the future.

"THE BEST FRIEND OF CHARLESTON" replica of the first American locomotive put into actual railroad service (A. D. 1830) is now on display in the concourse of the Union Station at Washington. As noted in the *Railway Age* of November 24, this locomotive, with a train of two cars, built by the Southern Railway has recently completed a tour under its own power over the lines of the Southern in South Carolina.

Progress in Aiccdent Prevention*

Methods of rating railways have been improved —Future prospects

By Julius H. Parmelee

Director, Bureau of Railway Economics

A REVIEW of the four years embraced in the period since the revival in 1924 of the awarding of the E. H. Harriman memorial medals in recognition of achievement in the field of railway safety reveals steady progress in the several phases of the work with which the Committee of Award has been occupied.

First, there has been progress in the development of the method by which the accident records of the railways are rated. Second, there has been progress in the stimulation of interest in the award among the railways themselves. Third, there has been progress in the reduction of casualties resulting from railway accidents. While these Harriman awards cannot be given the whole credit for this improvement in the safety field, they have had some share in the achievement, and we may feel justly proud of that share, whatever its extent may be.

Method of Rating Improved

Development in the method of rating the accident records of the railways has been accomplished by careful study and by continuing analysis of the results of the application of the committee's formula to the records. The committee has received many helpful suggestions from individuals and associations interested in the general promotion of railway safety work. The formula as it now stands has proven generally satisfactory in practice, and should stand the test of time without undergoing radical changes in the near future.

Stimulation of interest among the railway managements is evidenced by the increasing number of railways which each year designate as their safety goal the winning of a Harriman medal. Every road should work toward that definite goal. I believe the technique of recent awards has been so handled that the attractiveness and desirability of the medals are increasing year year by year.

Noteworthy Progress

Progress in the reduction of casualties resulting from railway accidents has been noteworthy, with the one exception of casualties at highway grade crossings. Prevention of grade crossing accidents does not rest wholly with the railways, and the growing number of highway vehicles using the crossings each year materially increases the hazard. In the field of passenger and employee safety there is marked improvement in the records for the year 1927, as compared with 1923, before the awards were revived. This is progress indeed, and marks a forward step toward that goal of ultimate safety on our railroads for which we are all working.

What of the Future?

A word as to the future. We have returns now in hand with respect to railway accidents for the first eight months of 1928, or to the first of September. These statistics show improvement in 1928 in the accident field, compared with 1927, and supply encouraging indications of further progress. During the first eight months of 1928, for example, the total number of fatalities of all classes were reduced by 431 persons, or approximately 10 per cent, while the number of non-fatal injuries was reduced by 13,917, or approximately 20 per cent.

The real test of the effect of these Harriman Memorial Awards on the future of railway safety can best be measured by the extent to which the competitive spirit is aroused among individual railroads. I have already indicated my belief that such a competitive spirit has been created, and that it is growing. Some light is thrown on this phase by the record made by certain railroads during the past three years, or from 1925 to 1927, as portrayed in the ranking sheets of the Committee of Award.

Comparative Records

For the purpose of such comparison, and because our time is brief, I will limit myself to the carriers of Group A. These are the roads which operate not less than ten million locomotive-miles in the course of a year.

One company, which stood thirty-seventh in the list in 1925, moved up to fifteenth place in 1926, and again rose to third place in 1927. This particular road, during the first six months of 1928, showed an improvement of 16.4 per cent over the corresponding period of 1927, which was a greater improvement than the average progress of all roads in Group A.

A second company, which stood twenty-fifth in 1925 and 1926, raised itself to eighth place in 1927. This company made an improvement of 20.8 percent during the first six months of 1928, foreshadowing a possible further advance in ranking during the present year.

A third company, which did not have so far to go, but which has shown progressive improvement, stood twelfth in 1925, rose to seventh place in 1926, and was ranked fourth in 1927. This company, during the first six months of 1928, showed an improvement of 5.8 per cent over the corresponding period of 1927.

Another company, which stood thirtieth in 1925, improved its position to twenty-fourth place in 1926, and again showed improvement to twenty-second place in 1927. This company has made the marked improvement during the first six months of 1928 of more than 30 per cent. We may hope that it will occupy a considerably better position than twenty-second place when the records for 1928 shall be compiled.

Taking the railways of Group A as a whole, there has been improvement each year from 1925 to 1927, while a further improvement of 12.7 per cent occurred the first six months of 1928.

We find, as against this average improvement of 12.7 per cent, that the 10 railroads of the group which had the highest ratings in 1927 are this year showing an average improvement of 5.7 per cent; that the second 10 roads are showing an average improvement this year of 11.1 per cent; that the third 10 roads are this

* From an address in connection with the presentation of the E. H. Harriman Memorial Medals awarded under the direction of the American Museum of Safety, December 12, 1928.

year showing an improvement of 15.3 per cent, and that the final 11 roads, out of the 41 comprising Group A, are showing this year an average improvement of 15.6 per cent. This would indicate that the gap is closing between the upper and lower ranges of the group, and that the companies today occupying the highest positions are in danger of losing their laurels, if they don't watch out.

Other Interesting Facts

Further consideration of the ranking for the three years from 1925 to 1927 brings out some interesting facts. I have added together the rankings for the three years of all companies that have a continuous record for that period, and in that way have secured a composite rank for the period as a whole. The first 10 roads in this composite ranking for the years 1925, 1926, and 1927 combined, are as follows:

1 Union Pacific
2 Minneapolis, St. Paul & Sault Ste. Marie
3 Southern Pacific—Pacific Lines
4 Chesapeake & Ohio
5 Chicago, St. Paul, Minneapolis & Omaha
6 Northern Pacific
7 Chicago, Burlington & Quincy
8 Seaboard Air Line
9 Great Northern
10 Louisville & Nashville

These roads, which have maintained their position among the first 10 during the past three years, may well take satisfaction in their cumulative records of safety performance. It is for other roads in Group A to challenge their positions, and in 1928 and future years to justify the adage that "uneasy lies the head that wears a crown."

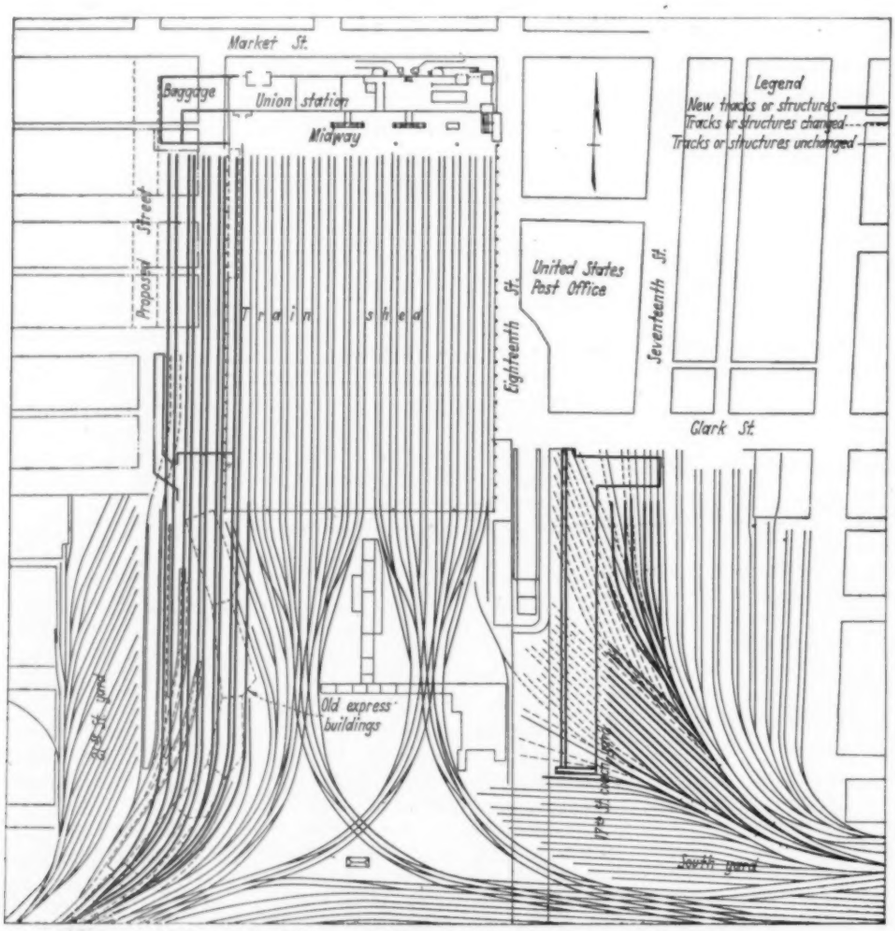
St. Louis Union Station Facilities to Be Enlarged

AS announced in the July 28, 1928, issue of *Railway Age,* the St. Louis Union Station is to be enlarged to permit the construction of 10 new station tracks. This work, which will involve the removal of the present baggage room and express buildings to new locations, will increase the train capacity of the station about 60 per cent, at an estimated cost of $3,000,000.

The St. Louis Union Station was built in 1892 and is one of the oldest of the larger passenger stations in the country. That the original plan was soundly conceived is evidenced by the fact that, with the exception of the remodeling of the approach tracks and the lengthening of the train shed in 1903, the station has been able to care satisfactorily for the growing traffic until the present time.

The new tracks will be built to the west of the present station tracks, increasing the number of these tracks to 42. They will be much longer than the present tracks, ranging from 1,350 to 1,720 ft. in length beyond the clearance points, and will be available for passenger trains, for the delivery of carload express, milk or theatrical baggage shipments, or for the storage or repair of passenger equipment as occasion may demand, platforms and driveways being provided for that purpose.

To permit the construction of the tracks, Twentieth street, which adjoins the west side of the present station and train-shed, will be vacated and a new street opened farther west to replace it. The new baggage room will be housed in an extension to the west end of the station building, while a new four-story express building 1,700 ft. long by 210 ft. wide, will be built east of the station tracks to replace the five separate express buildings now located to the west of the tracks.



Additional Facilities to be Provided for St. Louis Union Station

Additional Storage Space

The new arrangement, while providing for enlargement of the station facilities will also provide additional storage space for passenger equipment in the Twenty-first street yard, and will permit the extension of that yard northerly where such expansion becomes necessary. The construction of the new express building will reduce the capacity of the Seventh street storage yard and this has been provided for by the construction of a new coach yard at Ranken avenue, a few blocks west of the station. A plan and description of yard, which utilizes an ingenious arrangement of crossovers to eliminate the objections of a stub yard, appeared in the July 14, 1928 issue of *Railway Age.*

Supreme Court Asked to Review I. C. C. Valuation Methods

Railways' counsel in O'Fallon case in brief assail valuation methods of I. C. C.—Claim same treatment accorded other utilities

WASHINGTON, D. C.

THE Interstate Commerce Commission's methods of finding the "value" of the railroads on the basis of a "formula" for arbitrarily ascertaining the "approximate investment", largely on the basis of obsolete prices, are vigorously assailed in the brief filed in the Supreme Court of the United States on December 13 by counsel for the St. Louis & O'Fallon and Manufacturers' railways in the recapture-valuation case.

Appellant railways take the position that in fixing the value of a railroad for recapture purposes consideration should be given to all relevant facts and circumstances, including present reproduction costs, whereas the commission has considered such costs only to reject them.

The case is an appeal from a decision of the federal district court for the eastern district of Missouri, rendered in December, 1927, which declined to review or enjoin the order in which the commission held that the net railway operating income of the O'Fallon for ten months of 1920 and the calendar years 1921, 1922 and 1923 exceeded 6 per cent of its value and directed the company to turn over to the commission 50 per cent of the excess for each period under the recapture provisions of the transportation act. The brief is signed by Frederick H. Wood, Robert H. Kelley, Leslie Craven and Daniel N. Kirby as attorneys and Charles Nagel of counsel. Oral arguments will be on January 2.

While the court has never said that value is synonymous with cost of reproduction the brief says, and while appellants do not so contend, under its prior decisions cost of reproduction at current prices is a relevant fact to be considered, and in rejecting it as a relevant fact entitled to no consideration whatever, the commission failed to follow the prior decisions of the court. It is pointed out that it has been held that the value must be determined in such a way as to give dominant weight to reproduction cost where there are no relevant facts or circumstances which would warrant a finding of value for the structural property less than its current cost of reproduction, less depreciation, if any. The present case is declared to be such a case, and the particular property involved is declared to be "clearly worth not less than its cost of reproduction, because of the facts pertaining to the nature and quality of the property."

The specific grounds of attack upon the validity of the order both in the Supreme court and in the court below among others are:

Court Asked to Review Findings of Value

(1) That the Commission's finding that, although the O'Fallon and Manufacturers constituted a group of carriers under common control and management, they were not operated as a single system, within the meaning of the Act, is based upon an erroneous interpretation of the statute and unsupported by and contrary to the evidence, and that said railroads constituted a group of carriers under common control and management and operated as a single system. If this contention is sustained, the order is clearly void, since it is based solely upon a consideration of the value and income of the O'Fallon alone. Furthermore, the Commission did not determine or undertake to determine the value of the property of the Manufacturers. Hence, there is no basis either in the Commission's report or in the record for a determination of the excess income of such system, if any, for an order directing either the creation of a reserve or payment to the United States, or for a decree modifying the order accordingly.

If the Court should sustain the appellants on this point, the whole order is void. It is nevertheless respectfully suggested that under these circumstances, the Court should also review the Commission's findings of value and pass upon the questions raised in connection therewith. The effect of setting the order aside on the ground that the Commission should have found that these two carriers constituted a single system will be to send the case back to the Commission to determine the value and income of such carrers as a single system. If it has erred in making its findings of value, that error should be corrected now. Furthermore, the public importance of the value questions is such that they should now be decided by this Court.

(2) That it appears upon the face of the Report that the Commission did not determine or undertake to determine the "present value" of the O'Fallon by a consideration of all relevant facts and circumstances, but that its so-called findings of value in respect of the O'Fallon were based upon a mathematical formula, the avowed purpose of which was to determine the approximate investment in its property; that the Commission refused in such so-called determination of value to give either effective weight or any weight whatsoever to the present cost of construction; that such refusal was not based upon any fact or facts found by the Commission pertaining to the property of said carriers, but upon the conclusion of the Commission, as stated in its Report, that no consideration should be given to present day prices in determining the value of any railway property within the United States for the purposes of either rate-making or recapture; that the Commission's so-called findings of value are based upon an erroneous conception of the law and of its powers thereunder and are unsupported by and contrary to the evidence; and that the true value of the O'Fallon greatly exceeded the so-called values found.

It is the contention of appellants that the Commission in its Report and Order disregarded and refused to follow the prior decisions of this Court declaratory of the law of the land, applicable to the valuation of public utility property, and substituted in lieu thereof the Commission's conception of what the law should be; that it did so upon considerations of supposed economic expediency and for the purpose of challenging the soundness of the prior decisions of this Court.

Commissioners Hall, Aitchison, Woodlock and Taylor dissented upon the ground that it was the duty of the Commission to obey the law, not to make it.

If the Commissions findings of value are based upon erroneous legal principle, or unsupported by and contrary to the evidence, as charged, the order of the Commission is manifestly void because in excess of the statutory authority conferred upon it.

(3) That under the provisions of the Act, all net railway operating income in excess of one-half of the amount by which such income exceeds six per centum of the value of the carrier's property remains the absolute property of the carrier, and consequently the order of the Commission, if it takes more, constitutes a taking of the carrier's property without due process of law, and a taking of private property for public use without just compensation.

(4) That the order of the Commission is void because the operation of the recapture provisions are dependent upon the prior establishment of rates in accordance with the rate-making provisions contained in paragraph (2); that unless and until rates are so established there may be no recapture; and that during none of the recapture periods had the rates of the carriers, in the regional rate group in which the O'Fallon was located, been so adjusted.

(5) That so much of the order as required the creation of a reserve fund in accordance with the Act is void because, if

enforced, the reserve fund provisions of the Statute, by reason of the limitations placed upon the use of the carrier's money impounded thereby, deprives the carrier of its property without due process of law.

(6) That the requirement that interest be paid from and after May first in each year succeeding the recapture period is void.

The lower court had determined the issue of confiscation, not by deciding whether the amount taken was in excess of that authorized by the statute, but upon the sole consideration that the return remaining to the carrier exceeded six per cent. In this, appellants contend the court erred. It is also their contention that having thus determined the constitutional question, the court erred further in refusing to consider whether the commission's order was in excess of its statutory authority by reason of the alleged invalidity of its findings of value. Judge Faris, in a separate opinion, concurred in the result upon the ground that the value of the O'Fallon had been properly determined by the commission, but dissented from the view of the majority that it was unnecessary for the court to pass upon the question of value.

The court annulled so much of the order as required the payment of interest from May first in each year succeeding the end of each recapture period, and held that interest began to run ninety days after February 15, 1927, but held adversely as to all other contentions of the appellants, and dismissed the appellants' petition in all other respects, adjudging the costs against the appellants.

Following is an abstract of the discussion of the chief points in the argument:

It is said that "What we do in this case we must in principle do for all railroads in the United States." The difficulty and inconvenience of determining present value by a consideration of all relevant facts and circumstances, including cost of reproduction, is pointed out. On the other hand, it is stated that the method adopted has the advantage "that it is simple and easy of application and involves no great expense or delay, and that its results are capable of reasonably accurate forecast. These are mere arguments of convenience and of administrative expediency. Neither convenience nor difficulty justifies a refusal to follow the law.

Reproduction Cost a Dominant Factor

This Court has never said that value is synonymous with cost of reproduction. The appellants do not so contend. Under the prior decisions of this Court, however, and under any rule the purpose of which is to determine *present* value, it is a relevant fact to be considered in connection with other relevant facts. It is the relevant fact which has most frequently been given controlling weight. On the other hand, where price levels have changed, original cost is not even a relevant fact material to the determination of present value, as was stated in *McCardle* v. *Indianapolis Water Company, supra.* Where price levels have not changed, it becomes a relevant fact, not because representative of original cost but because original cost in such cases is the best evidence of what the probable cost of constructing the property would be in the period under review. In certain cases as, for example, in *McCardle* v. *Indianapolis Water Company, supra,* and in *Standard Oil Company* v. *Southern Pacific Company,* 268 U. S. 146, the circumstances were such that it was held that the value must be determined in such a way as to give dominant weight to reproduction cost. This is such a case. This is so because there are no relevant facts or circumstances which would warrant a finding of value for the structural property less than its current cost of reproduction, less depreciation, if any.

The distinction between the relevancy of reproduction cost and the irrelevancy of original cost does not rest entirely on judicial authority. Cost of reproducing a given article may not be synonymous with its value. It certainly, especially when price levels have changed, has a more direct bearing thereon than original cost and under the circumstances of the case may be, but not always, determinative of value. The value, for example, of a second hand automobile, is largely, if not primarily determined by the cost new at the time of a similar vehicle, with appropriate deduction for prior use and accrued depreciation. On the other hand, it is in no way affected by its original cost and may be more or less than such original cost, dependent upon advance or decline in the cost of a similar vehicle if new, and upon the extent of such advance or decline.

Flexible Rule Required

The value of a public utility property, whether it be a railroad or a water plant, may be more or less than the sum of the cost of reproduction, less depreciation, if any, of its several units. Property is not all of the same quality. Consequently, the relevant facts and circumstances vary as to different properties, and no formula can be employed. The rule of *Smyth* v. *Ames* is a flexible rule adaptable to the circumstances of each particular case as it arises. Because money expenditures are not equally productive of value, a particular property may be worth less than its cost of reproduction at current prices. Such a conclusion, however, may not be based upon a consideration of its original cost. It must be based upon some relevant fact other than its cost of reproduction, by reason of which, as the result of the exercise of a fair and reasonable judicial determination, based upon facts of record, such a conclusion may be supported. In respect of the O'Fallon property there are no such facts. This particular property is clearly worth not less than its cost of reproduction, because of the facts pertaining to the nature and quality of the property.

It is not necessary for this Court to determine in this case precisely what level of prices shall be taken as representative of the post-war period. In refusing to give effective weight thereto, the Commission clearly erred. It is not necessary for the Court to determine the value of this property. The Court need not go farther in this case than to satisfy itself that the valuation attacked is substantially inadequate.

Investment Theory Unsound

With commendable frankness the Commission has rested its findings of value upon the investment theory of public utility valuation. In order to sustain the order, the Court must overrule all of its prior decisions in which it has uniformly sustained the present value theory and rejected the investment theory.

The conflict between the investment theory of the Commission, and the present value theory, has been persistently before this Court for thirty years. In each case in which it has arisen the real question at issue has been whether it was the property of the utility and its value at the time of the inquiry, or the dollars originally invested in its property which were protected by the Constitution. In every case this Court has consistently held that it was the former and not the latter, which was the subject of such protection. It has so held when prices at the time of the inquiry were lower than during original construction, and also when they were higher.

Smyth-Ames Case

It is said that the investment theory protects "every dollar invested and remaining in the property." If it be true that the utility is only entitled to the protection of the "dollars invested" when the prices have risen, it is entitled to the protection of the dollars invested when prices have fallen. But a review of the cases discloses that the very origin of the value doctrine was to secure relief from the hardships to the public from the protection of the investment, at a time when the property [expressed as *value*] was not really reflected by the dollars invested. The doctrine has been subsequently sustained against repeated attacks, because it has been obvious that only through recognition of the value of the property can the injustices be avoided which are inevitably consequent upon fluctuations due to a changing money standard. The "dollars invested" argument was first repudiated in *Smyth* v. *Ames,* at a time when prices were substantially lower than during original construction. This Court in that case rejected the dollars invested argument, and, held that it was the property of the utility and the present value thereof, not the investment therein, which was protected by the Constitution. It held that the value of such property should be determined as the value of property is customarily determined, viz., as a matter of judgment reflecting a proper consideration of all relevant facts and circumstances. The same question and substantially the same arguments were presented, and the same decision reached in *San Diego Land and Township Company* v. *National City,* 174 U. S. 757; *Cotting* v. *Goddard,* 183 U. S. 91; *San Diego Land and Town Co.* v. *Jasper,* 189 U. S. 442; *Stanislaus Co.* v. *San Joaquin & King's River C. & O. Co.,* 192 U. S. 214. These cases are significant because they show that following the decision in *Smyth* v. *Ames* the utilities vainly attempted to establish the very proposition which the Commission now seeks to establish.

In this case the parties changed sides. The relation of prices at the time of inquiry and on original construction, respectively, have become reversed. It was thus to the advantage of the public to establish original cost as the basis of regulation in order to keep rates down. The public authorities who had hitherto opposed the investment theory therefore became its champions. Similarly, the representatives of the utilities became the proponents of the present value theory. The abstract of the briefs in this case shows that every important argument now advanced in support of the investment theory was presented to the Court * * * including the argument that railroad or public utility property is not private property and is not entitled to the full protection accorded by the Constitution.

The answer of this Court was decisive as to these contentions. The Court said:

"It is clear that in ascertaining the present value we are *not* limited to the consideration of the amount of the *actual investment*, if that has been reckless or improvident, losses may be sustained which the community does not underwrite. As the company may not be protected in its actual investment, if the value of its property be plainly less, so the making of a just return for the use of the property involves the recognition of its fair value if it be more than it cost. The property is held in *private ownership* and it is *that property* and not the original cost of it of which the owner may not be deprived without due process of law." (Italics ours.)

Immediately after the termination of the war various utilities found themselves in dire straits because their rates, artificially restrained by legislative or commission action, were not rising with the cost of labor and materials. The State Commissions made a determined effort to prevent the utilities from having the value of their properties measured in terms of the current depreciated dollar. They refused to give effect to present day reproduction costs in making valuations for rate-making purposes. Consequently, the issue immediately went to the courts in a large number of cases. These cases culminated in decisions of this Court in which the doctrine of *Smyth* v. *Ames* was again examined and again sustained. These cases sustained the law as declared in *Smyth* v. *Ames*, and reaffirmed in *Minnesota Rate Cases*, and held that the true present value of public utility property is the test of the constitutional rights of its owner rather than the dollars originally invested therein. *Southwestern Bell Telephone Co.* v. *Public Service Commission*, 262 U. S. 276; *McCardle* v. *Indianapolis Water Co.*, 272 U. S. 400; *Bluefield Co.* v. *Public Service Commission* 262 U. S. 679; *Pacific Gas etc. Co.* v. *San Francisco*, 265 U. S. 403; compare *Standard Oil Company* v. *Southern Pacific Co.*, 268 U. S. 146.

The statement in the *Minnesota Rate Cases* that "the property is held in private ownership and that it is that property and not the original cost of it of which the owner may not be deprived without due process of law," rests on a solid foundation.

Implicit in this statement is a recognition of the fact that whatever it is that is devoted to public use is the thing that is subject to public regulation and to constitutional protection in such regulation. But the dollars originally invested are not, and never were, devoted to public use or subject to regulation. By their expenditure tangible physical property was acquired. It may not be doubted that it is that property now used, not the dollars invested therein at some remote time, which is devoted to public use and the subject of public regulation and protection by constitutional restraints in the exercise of such regulation, The property owner whose rights are at issue, is the present owner of the property now devoted to public use. His present sacrifice and return, cannot be those of that remote original investor and owner.

The prudent investment theory rests on the illusion that the dollar of to-day is the same as the dollar invested before the late War. But the dollar is a mere medium of exchange.

The Changing Dollar

Where the dollar is subject to wide fluctuations, as it is, the only possible means of really protecting the investment is to state it in terms of present-day dollars. The failure to do so is the vice in the original dollars invested method. On proper analysis it appears that the only difference between the original cost as of 1910, and the reproduction cost as of 1920-3 for the O'Fallon railroad, considering the same items of property and elements of cost, is that the former is expressed in past prices measured in an obsolete dollar, whereas the latter is measured in the dollar of today. Prices having greatly increased as a result of the war, the O'Fallon should now earn a proportionately higher return in order for its income to procure the same quantity of capital goods. But the Commission now insists that the income be measured in terms of pre-war dollars, without equating them in recognition of their decreased purchasing power. This results in a deprivation of real income through accepting the illusion that the dollar is a fixed standard.

The Government is attempting to recapture earnings made from hauling coal, mined under the increased post-war wages and sold at the higher market prices. The wages, the market price of coal, and the cost of construction of the railroad during the period in question were all high because of the depreciated dollar. But the Government is unwilling to accord the same treatment to the railroad that is accorded to industry and labor generally, when all costs and prices have been substantially increased. Therefore, it is not true that to measure the value of the railroad property in terms of the existing dollar is to "single out one class of investors for special (favorable) treatment" as suggested in the concurring opinion of Commissioner Eastman. The prices of practically all commodities and the wages of labor have shown a general increase since the war, and with unimportant exceptions, the industrial world has accommodated itself to this new order of things. This is evidenced by the great prosperity of American industry at the present time, when industry as a whole is securing even more than its normal returns and is doing business in the terms of values and costs measured with the present dollar. The public utilities of the country, other than railroads, as a result of the decisions of this court have not been excluded from the operation of this economic law which has affected all of the monetary transactions of the country. The railroads should not be excluded, and cannot be, without actual deprivation of property.

With falling prices, on the other hand, the dollars invested theory would result in singling out a single class of property and its owners for beneficial treatment. With a fall, for example, of fifty per cent. in prices, a public utility, if permitted to receive a fair return on the original dollars invested, would receive just twice as many dollars as under the present-value theory. The purchasing power of these dollars would be twice as great as the purchasing power of the dollar invested. It was to relieve the public from the hardship resulting from such special treatment that the present-value rule was originally established in *Smyth v. Ames*. It is a rule that is sound both in law and in economics and is the only rule by which injustices inherent because of the fluctuations in purchasing power of money, may be avoided. By it, the pecuniary rights of all parties are maintained on the same standard. The manifest injustice, in a time of falling prices, of compelling the public to pay rates based on the original dollars invested at a time when the purchasing power of that money was greatly higher, is self-evident. On the other hand the injustice of denying to a utility a return on the value of its property, measured in terms of a depreciated dollar of a greatly diminished purchasing power, is equally obvious, and for the same reasons. Whether it may exact such rates as to pay it a return upon such a value without interfering with the free flow of commerce is an entirely different question, which we shall consider subsequently. But this is a practical question, which is always present, whatever the price level. As a matter of law and economic theory it is entitled to receive such rates, if it can get them.

Railroads ordinarily operate in competitive fields under common standards of rates, fixed for all the carriers and not for a particular carrier. If there were two roads between the same termini, alike or identical in construction, and differing only in that one was built in 1897 at low costs, and the other in 1925 at high costs, under the Commission's theory one will have a much greater value than the other. The Commission's arbitrary rule will subject only one to recapture, although the roads are substantially identical, perform the same service, and should be entitled to the same return.

A "Scare" Argument Which Contains No "Scare"

The Report says: "It may well be that the valuation of railroads on a national scale requires the beginning of a new chapter in valuation." It is not plain whether by this statement the Commission meant to suggest that the present value rule which has been applied by this Court to the valuation of all public utility property, including railroad property, should be completely discarded for the investment theory, or whether a distinction should be made between the principles governing the valuation of railroads and those governing the valuation of what the report describes as "local utilities". Either suggestion is unsound either in law or economics. The right of a railroad company to the protection of its property under the Constitution is no less than that of a so-called local utility, as the dissenting commissioners state.

On the economic side, certain observations in the Commission's Report are apparently intended to suggest that unfavor-

able economic consequences *might* result *if* full weight were given to cost of reproduction at current prices in determining the value of every railroad in the United States, and *if* rates were established to yield a fair return thereon. The same argument might have been made in any of the cases in which the present-value rule has been applied since the War. It has no legal significance.

It is equally without practical foundation. The suggested possibilities are wholly speculative, greatly exaggerated, and rest on no proof whatsoever.

The Commission's observations in respect of this matter may be properly characterized as a "scare" argument designed to lead this Court to hold that, although it has applied the present value rule to other public utilities, it should not be applied in the valuation of railroad property. It is a "scare" argument which contains no "scare." In its Report the Commission itself is careful to make no such prediction. The possibilities of any such consequence arising are, as indicated in the Report, remote.

At various places in the Report, the Commission speaks of the economic consequences which *would* have resulted in the recapture years if full weight had been given to cost of reproduction at spot prices in determining the value of every railroad in the United States, and if rates had been established, designed to yield a fair return thereon. Rates were not so established, and the economic consequences suggested did not occur. It appears on the face of the Report that the majority itself anticipates no unfavorable economic consequences for the future through adherence to the present value rule, but rightly believes them to be so highly improbable as to be practically impossible of realization.

The Commission might have gone considerably further in expressing doubt as to the materialization of the economic consequences suggested. It might have referred to the fact that the duty imposed by the rate-making rule is a duty to be performed by the Commission "in the exercise of the power to prescribe *just* and *reasonable* rates." It might have referred to the proviso in the rate-making section (paragraph 2) which modifies that section by providing "that the Commission shall have reasonable latitude to modify or adjust any particular rate which it may find to be unjust or unreasonable and to prescribe different rates for different sections of the country." It might have pointed out that under the authority conferred by this proviso and despite the fact, as stated by the Commission, that the carriers had not earned the contemplated rate of return, it had, nevertheless, since the passage of the Transportation Act, reduced thousands of rates, as evidenced by its published reports. As an example it might have instanced its decision in *Rates on Grain and Grain Products and Hay,* 64 I. C. C. 85, in which, at a time when the returns of the carriers were far below the statutory rate of return, it reduced all rates on such products ten per cent. largely by reason of the economic situation found to exist in respect of this industry, and the necessity for stimulation of traffic. It might have pointed out, as stated in that case, that the carriers had made many similar reductions from the same considerations and for the same purpose. It might have pointed out that, in *Reduced Rates, 1922,* it made an horizontal reduction of 10% in all the rates previously established as a result of the increases authorized in *Increased Rates, 1920,* although it appeared on the face of its Report that in none of the rate groups fixed by the Commission were the carriers earning the statutory rate of return. It might have pointed out that in the Western case referred to, the carriers were not only restrained by self-interest from seeking the full measure of advance to which they were theoretically entitled, but that the Commission denied even the modest advance in rates sought, notwithstanding the fact that the revenues of the western carriers were plainly inadequate. Between the self-interest of the carriers in the preservation of their traffic and the Commission's control of the situation under the proviso of paragraph 2, it may, we believe, be fairly assumed that no untoward consequences would result in the way of exorbitant transportation charges by adherence to the present value theory. As indicated from the foregoing quotations from its Report, the Commission is evidently of the same view.

Finally, if such results should occur, they are directly attributable to the policy of Congress in providing that rates shall be such as to insure a fair rate of return upon the aggregate value of railway property.

No carrier, of course, has any constitutional right to the continued maintenance of such a rule. It is of right only entitled to demand that the rates shall be such as to yield a fair return upon the value of its own property. Since railroad traffic is largely competitive, its ability to take practical advantage of this right is dependent upon whether its competitors also can make a case of confiscation. No competitor of the O'Fallon, for example, could obtain relief from existing rates, under any theory of valuation because the O'Fallon could not. The same situation exists in any part of the country where established rates yield a fair rate of return upon the value of any important carrier therein. This is true whatever the rate-making rule.

No provision of the Constitution requires Congress thus to base rates on average conditions, or requires it to continue such policy. The present rate-making rule is believed to be a salutary rule. It has led to no unfavorable economic consequences in the past. Despite its observations as to what might have been or might be the Commission is obviously of the view that it will lead to no unfavorable economic conditions in the future. If Contrary to such expectation, the restraint of self-interest and of the power reserved to the Commission in the maintenace of individual reasonable rates should turn out to be inadequate to protect the commerce of the country against exorbitant charges under the rate-making rule prescribed by Section 15a as it now reads, Congress has full power either to repeal or modify it.

Effect of Increased Valuation On Rates

The Report speaks of advances of from 75 to 90 per cent., which might have been necessary *if* rates had been advanced in 1920 so as to yield a fair return on values predicated on cost of reproduction. These percentages are based on the application of spot prices of that abnormal year in the valuation of *all* the railroads. The law does not require the use of spot prices (*McCardle* v. *Indianapolis Water Company, supra*). The extent to which advances would now be required is not stated. The inference which the Commission obviously seeks shall be drawn is that they would be very great.

The extent to which property values would be increased if full weight were given to cost of reproduction at prices now current in determining the value of every railroad is not stated. Since it is unknown, it could not be stated. Nor does the law require the rigid application of such a basis of value. The value of each property is to be determined by a consideration of all relevant facts and circumstances. All railroad property is not alike.

From the record in this case, however, the advances which would be required, if rigid application were given to such formula in substitution for the one employed by the Commission, may be approximated within reasonable limits. As pointed out by Commissioner Taylor, operating expenses and taxes consume about eighty-two per cent. of total disbursements. In the year 1926 the aggregate net railway operating income of all railroads was $1,229,000,465 out of aggregate income of $6,382,939,546, or a little less than twenty per cent. Any increase in aggregate value, therefore, affects but twenty per cent. of the rates.

If it be assumed that the substitution of such valuation for a value based on original cost or 1914 prices would produce substantially like results if applied to all railroads, there would be a resulting increase of 57% in aggregate value. An increase of 57% in that part of the revenues applicable to a return on the investment, (to wit 20%) would call for an advance in the rate level of 57% of twenty per cent., or 11.4% to provide a return on such increased value. If, instead of applying the 1923 index number of 174, the index number shown for the year 1922 (157) be applied, and the same allowances for working capital, materials and supplies, and the same additions for subsequent improvements be added, the value in 1923 becomes $1,405,746, or 144% of the value found by the Commission. A 44% increase in that portion of the rates applicable to a return on the investment would require an increase of 44% of 20% or 8.8%. Both of these assumed factors of rate increase are too high because all additions and betterments, subsequent to 1919, are taken in at their full cost, many of which were made at prices higher than those which now prevail and under the cost of reproduction method would be reduced.

In *Increased Rates 1920, supra,* the Commission authorized advances in freight charges of 40% in the Eastern group, 25% in the Southern Group, 35% in the Western Group and 25% in the Mountain-Pacific Group. The increases allowed in 1920 did not become effective until August 26. They are not, therefore, fully reflected in the statistics of that year. They are completely reflected in the 1921 earnings in which the average receipts per ton mile were 1.275 cents. As a result of the general reduction made in 1922 and of the successive reductions which the Commission has since made, the average receipts per ton mile in 1926 were 1.081. An increase of 11.5 per cent. applied to the traffic of 1926 would increase the earnings per ton per mile of that year to 1.205, or still below those of 1921 accruing under the advances made in 1920. An increase of

8.8% applied to the traffic of 1926 would increase the earnings per ton per mile of that year to 1.176, or very materially below the per ton mile earnings accruing under the advances made in 1920. As stated, there was no suggestion when the rates were advanced in 1920 that they would result in the exaction of unbearable charges. American industry has since reached heights never before attained in the way of either profits or volume of business done. Neither does it appear what the effect of such advances would be upon commerce. If, with such readjustment of individual rates as the Commission is authorized to make under the proviso to paragraph (2) of Section 15a, it continued to move freely, there would appear to be no reason why the price of railroad transportation, like the price of other commodities and services, should not be measured in terms of the present dollar. If by reason of such advances traffic did not move freely, the advances either would not be made, or if made, would not be maintained. The whole argument is a "scare" argument based wholly on speculation and supported by no proof. The advances indicated are certainly not such as to shock the conscience.

No Distinction Between Railroads And Other Utilities

Reference has already been made to the attempt of the Commission to suggest a distinction in point of constitutional principle between the railroads and the other public utilities. Clearly, there is no distinction. If this Court is to hold that the rights of the owners of a railroad are to be adjudicated on an original cost basis, the conclusion is inescapable that the rights of an owner of an electric interurban line, an electric light and power plant, or of a telephone company, (the scope of whose activities are frequently, and in some cases generally, of an interstate scope), must be adjudicated on exactly the same basis. The state commissions, in their regulation of "local" utilities, have endeavored to escape the effect of constitutional restraints arising from the doctrine of *Smyth* v. *Ames*, a case involving the Union Pacific Railroad, and have urged the very same reasons to justify their action, which are urged by this Commission. In the footnote is shown the investment in the so called "local" utilities, including the electric light and power, electric railway, telephone, gas and water companies. The aggregate present investment is approximately 22 billion dollars. As a result of the decisions of this Court, the charges of these utilities, speaking generally, have been increased so as to yield a fair return on the value of their property. The aggregate of such advances must be far greater than those which would result from basing rates on the present value of railroad property. No unfavorable consequences have resulted from such advances in the rates of other public utilities, nor has this Court hesitated to adhere to the present value rule in determining the value of such utilities because of speculation as to consequences that might result. It should not do so in this case.

Findings of Value Purely Arbitrary

The order of the Commission is void even upon the theory expounded and adopted by the Commission, because unsupported by any evidence whatsoever. The Commission found that the original cost of the property could not be ascertained. As appears on the face of the Report the application of so-called 1914 prices to the inventoried quantities of June 30, 1919, and the addition thereto of the amount by which actual cost of units installed between July 1, 1914, and June 30, 1919, were resorted to, in the absence of original cost, as an approximate determination thereof.

This assumption rests on no proof whatsoever. In making it the Commission relied solely on the statement quoted in its Report from its prior report in the *Texas Midland* case, that "the cost of producing and equipping a railroad in most parts of this country on June 30, 1914, was a fair average for at least twenty years preceding." From beginning to end, there is nowhere in the record any suggestion on the part of any representative of the Commission that these estimates were offered as estimates of original cost.

The methods pursued in the determination of value under Section 19a were established prior to the War and before the increase in prices which has since occurred. They were clearly intended to establish cost of reproduction at the prices then prevailing for the purpose of basing value primarily thereon. Such being their purpose, many items of original cost, as disclosed above, were entirely excluded, and the actual cost of all units of property installed prior to the pricing period intentionally disregarded. This was proper since the purpose was to arrive at the then present cost of reproduction. Except for the subsequent enhancement in prices, it is a fair inference that the Commission would have continued its original policy of disregarding original cost and of determining present value on the basis of cost of reproduction. As stated in the Report of the dissenting Commissioners in failing to apply corrective factors to the reproduction estimates at 1914 prices, the Commission has departed from its original purpose, as expressed in *Winston-Salem Southbound Ry. Co., supra,* in which it was said that corrective factors would be applied to the values of property other than land, which had been determined as of June 30, 1914 "as the normal trend of prices of labor and material may go upward or downward."

In order to get away from substituting current prices for those of the pre-War period by the use of such corrective factors, it is now asserted that these estimates may be supported as estimates of original cost. Their very composition and purpose precludes their adoption as such. The Commission, therefore, in addition to determining value by an arbitrary mathematical formula, has adopted, (under its new theory that investment should be substituted for actual value) an arbitrary formula for the determination of original cost, by which it cannot possibly be ascertained, and the ascertainment of which was contrary to the original purpose of its adoption.

The Commission's "value" rests on such radically inconsistent bases that the result defies definition. It is consistent with no theory or standard. The "value" found is not a value based on the *present* cost of reproduction, because it is largely based on *obsolete* costs. It is not a value on a *pre-war* standard. For the bulk of the property, 1914 prices were applied, and the Commission stoutly repudiates the use of present prices, but property acquired since 1914 is appraised at its high actual cost and the Commission appraises the land for the year 1923, for example, at the 1923 market values. It is not a value based on a *complete* cost of reproduction sufficient to produce the property even in pre-war times, because depreciation has been deducted, the entire cost of acquiring the land is not included, and the cash working capital actually used is excluded. It is not the original cost of the property, because the original cost is unknown, because the method of determination eliminates certain well known elements of cost invariably incurred, and because the land is appraised as of 1920-3. It is not the true economic value of the property, because there is no attempt to reflect the real character of the railroad from the standpoint of its economic justifiability, since the Commission values all railroads, good or bad, by the same formula. As disclosed in the opinion of Commissioner Potter in *Florida East Coast Railway,* 84 I. C. C. 25, 41, the same formula has been used for practically all of the railroads, at least for the first 330 appraised by the Commission. The Commission indicates that it has followed the same general method.

In essence the position of the Commission is thus revealed to be that it should be undisturbed in its right to fix an aggregate sum for all the railroad property in the country, which is sometimes called "value," and sometimes approximate "investment," which is neither, and which is thought desirable because it will produce a predetermined standard of rates. This conception of "value" is consistent only with the theory that the Commission, unrestrained either by the constitution or the courts may arrive at that sum upon which the railroads should be permitted to earn a fair rate of return under the Commission's particular conception of what that return shall be, and by calling such a sum "value," make it so. There can be no constitutional protection under this theory. This claim by the legislative agencies for dominion over the public utilities, unhampered by constitutional restraints, has been frequently condemned by this Court.

Rate-Making Rule and Recapture Provisions Interdependent

That the recapture and rate-making provisions are interdependent, and together constitute a single plan, has already been recognized by this Court.

Compliance with paragraph (2) is therefore prerequisite to the creation of the trust established by paragraph (5) and to recapture under paragraph (6). Congress did not provide that any carrier earning in excess of six per cent. upon the value of its property under any set of rates should hold one-half thereof as Trustee for the United States. Even under the reasoning of this Court in the *Dayton-Goose Creek* case, if the recapture provision alone had been enacted, it would have been of doubtful constitutionality. Such a law, it appears, would have been an appropriation of property already vested, not a regulation of commerce, and could not have been sustained even if accompanied by the declaration of a trust. The whole legislative intent contemplated the establishment of rates, higher than under existing standards, for the purpose of in-

suring an adequate national transportation system, under which certain carriers, would earn higher returns than under the existing system, and could be compelled to hold in trust a part of the excess over six per cent. on the value of their property. This intent is plainly evidenced in paragraph (5).

Recapturable earnings, therefore, are limited to those derived through compliance with this rate-making plan. This is so because paragraph (6) expressly limits recapture to earnings received "under the provisions" of section 15a, and because such was the legislative intent drawn from the act as a whole.

Prior to August 26, 1920, none of the carriers in the United States received any income whatever "under the provisions of" Section 15a. The Report and Order of the Commission, however, declares a trust in favor of the United States for one-half of the carrier's income in excess of six per cent. for the period from March 1, 1920 to December 31, 1920. Clearly during this period the carrier received no income whatever "under the provisions of" Section 15a. Therefore no trust arose under paragraph (5) and no excess income under paragraph (6).

In the instant case, decided February 17, 1927, the Commission said of the rates resulting from the action taken by it under the ratemaking rule:

"As a matter of fact, the railroads have not earned on the average, the fair return which the rates were designed to produce."

The Commission itself, therefore, is authority for the statement that the rate-making rule of paragraph (2) has never been complied with since the passage of the Act.

Congress Intended More Generous Treatment

The history of the times warrants the statement that it was the purpose and expectation of Congress that under Sec. 15a the carriers as a whole should be insured more generous treatment than in the past in order to insure the maintenance of an "adequate national system of transportation." It cannot be doubted that in providing that the general level of rates should be made such as to yield a fair return upon the aggregate value of all railroad property with the use of the recapture device as a check upon excessive earnings thereunder, Congress intended that the returns on such aggregate value should be at least as high as under the old system of rate-making. For ten and a half years preceding Federal control, the net railway operating income of the carriers as a whole was 5.2 per cent. on their property investment accounts. For the years 1921 to 1926, inclusive, it was 4.2%. The investment account of the carriers may not be taken as determinative of their value. These figures, made on a comparable basis in the two periods, however, show clearly that the purpose of the rate-making rule with its accompanying recapture device has not been realized. Looking at the country as a whole, there has not been substantial compliance with the Act on the part of the Commission. Its action in reducing rates in all groups ten per cent. in 1922, notwithstanding its finding that the rate of return was far below that required by paragraph (2) and its refusal in *Revenues in Western District 1925*, 113 I. C. C. 3, to permit any advance in the rates of the Western carriers demonstrate that after its first vain effort to comply with the rate making rule of paragraph (2) it has been content to allow revenues of the carriers to be determined as before, viz., by the aggregate of separately established rates. Throughout the period there has been neither substantial compliance with the rate-making rule nor attempted compliance therewith on the part of the Commission.

The record in this case shows a similar lack of compliance in respect of the Eastern group, within which the O'Fallon is included.

If, as appellants contend, substantial compliance with the rate-making provisions is a condition precedent to recapture, then it follows that there may be no recapture unless such substantial compliance fairly appears from the record. The Commission has not completed its valuation work and has issued but few final valuations. The figures employed in all the foregoing calculations may properly be regarded as minimum figures based primarily upon a summary valuation made immediately upon the passage of the Act, to fit exegencies of the time and, as stated, takes no account of the effect of the increased price level. Even under such minimum valuation the rate of return on such a valuation is less than that fixed by the Commission as a reasonable rate of return in the year 1923, as well as in all other years. When proof of aggregate value is availing, as already stated, the Commission in its Report, dealing with the country as a whole, says that at no time since the passage of the Act have the carriers received the rate of return contemplated thereby. Under these circumstances, it is respectfully submitted that there may be no recapture until it shall clearly appear that there has been substantial compliance with the rate-making provision.

We are not unmindful that the requirement of paragraph (2) is that the rates established by the Commission shall be such that the carriers will earn an annual income "equal as nearly as may be to the fair return upon the aggregate value of the railroad property of such carriers" and does not require mathematical exactness therein. Congress knew that the task imposed on the Commission of readjusting the rates of all the railroads embraced within a particular group, so that such group would earn an annual operating income equal to a fair return on the value of the property, would be difficult to perform with complete exactness. Therefore, complete exactness in the resulting income was not required, but substantial exactness—a result approximating exactness as closely as was reasonably practicable,—was required, and was expressed by the words "as nearly as may be."

This must be the intent because any other construction would permit the Commission at its uncontrolled discretion to defeat the express purpose of the statute. Minor variations could not defeat this purpose, substantial ones would.

Report of Bureau of Safety

THE report of the Director of the Bureau of Safety of the Interstate Commerce Commission for the year ending June 30, 1928, is issued by the Interstate Commerce Commission in a pamphlet separate from the regular annual report, and with it are included extracts from the annual report dealing with the work of this bureau.

W. P. Borland, director of the Bureau, says that the safety appliance equipment of the railroads, which has been gradually improving for a number of years, is now in the best condition ever known since the government inspections began. The number of freight cars inspected in the year under review was 1,488,892 and the percentage found defective was 2.52; a larger number of cars and a smaller percentage than in any previous year. Passenger cars inspected 24,013, percentage defective, 1.32; locomotives inspected 23,365, percentage defective, 1.49.

In certain localities, the inspectors still find insufficient attention paid to maintenance of safety appliances on freight cars, particularly on lines of terminal switching companies.

Rules for the maintenance of air brake and air signal equipment, formulated by the Bureau in conjunction with the American Railway Association, have now been in effect for more than two years and a marked improvement has resulted.

The report briefly reviews the reports received concerning observance of the hours of service law and the activities of the Bureau in the investigation of train accidents.

The Bureau, during the year, has examined plans of 37 safety devices other than signal and automatic train control apparatus, of which three were commended as practical devices, namely: a nut lock, a car spring plank and brake beam safety device, and a rail joint.

The inspectors of the Bureau during the past year have devoted 14,993 days to regular inspection work, 1823 days in procuring evidence of violations of law, and 92 days in court furnishing testimony; 1203 days were required in the investigation of accidents and 751 days were devoted to special investigations. The inspectors are credited with having performed their varied duties in a highly satisfactory manner.

The report contains the usual tables showing the number of inspections of airbrakes, on each road, and the total number of defects found on cars and locomotives on those roads upon which 500 or more cars were inspected.

Solid Carbon Dioxide for Refrigerating Railroad Cars*

Initial refrigerating temperature of 109.3 deg. F. below zero—Lack of moisture presents problem

By J. W. Martin, Jr.
Consulting Engineer, New York

THE problem of using latent heat for cooling purposes reduces itself to the selection of a material having a relatively high latent heat and one which is not too expensive to be thrown away after it has served its purpose. In this class nature and civilization have provided only three raw materials whose value in their natural state is absolutely nothing. Air, water, and carbon dioxide are so plentifully and so widely distributed throughout the world that the only necessary costs attached to them are those inherent in applying them to the purpose in hand. The latent heat of vaporization of liquid air is only about 90 B.t.u. per lb. and the cost of preparing it by any methods we now have is excessive for this amount of cooling power. There are other factors, of course, which enter the liquid-air situation, such as the danger of explosion, etc., which render its present use impractical. The latent heat of fusion of ice is 144 B.t.u. per lb. and since its temperature of melting, as well as its cheapness, are well within a reasonable range, it is not surprising that water ice has furnished the world with portable refrigeration for several generations. It is only within a very few recent years that successful efforts have been made to apply the third great costless raw material, carbon dioxide, to the problem of portable refrigeration.

Solid carbon dioxide prepared by the compression into blocks of the snow formed by rapidly evaporating liquid carbon dioxide, possesses an extraordinarily high latent heat, 276 B.t.u. per lb. in passing from the solid to the gaseous state up to zero degrees F., and at the same time is endowed with several other extremely important characteristics which make it invaluable as a portable refrigerant. Already, under the trade name, "dry-ice," it is becoming a factor in the commercial handling of ice cream in transit, and its entrance on a large scale into the field of railroad refrigeration promises similar results.

Refrigeration Properties of Solid Carbon Dioxide

Solid carbon dioxide is extremely pure carbon dioxide having been made by a process which effectively prevents the carrying of any impurities that might originally be present in the carbon dioxide, into the finished product. It evaporates cleanly to a pure and anhydrous gas. Its high latent heat allows the carriage of practically twice as much cooling effect in one pound of material as is permitted by water ice. It evaporates at an extremely low temperature, more than 109.3 deg. F. below zero, which is the temperature of its evaporation in an atmosphere or pure carbon dioxide at atmospheric pressure. As a general rule, it yields a temperature lower than this because in practice it is seldom that the gaseous atmosphere surrounding the block of solid carbon dioxide is completely free from air. The dryness of the gas evolved from melting solid carbon dioxide, as well as the inherent properties of the carbon-dioxide gas itself, make it an exceptionally efficient insulating medium. Carbon-dioxide gas has approximately 40 per cent greater insulating value in enclosed spaces than even dry air, and its advantage over the usual moist air is yet more noticeable.

In applying this material to the solution of refrigeration problems, full advantage is taken of these peculiarities. The extremely low temperature of the melting block provides a factor of safety for producing ordinary temperature not to be had in any other way. It is therefore possible to insulate the refrigerant from the material to be cooled in such a way that its latent heat will supply just enough cooling effect to maintain practically any desired temperature. The fact that the gas produced is a dry gas, and not a liquid which must be drained away, allows this insulation to be made up of practically any desired material and at the same time allows the gas itself to be used as an extremely effective part of the general insulation of the block itself and of the space to be cooled. The insulating value of paper and paper pulp, of cork and balsa wood, of celotex and other similar prepared fibers, can be fully realized only when they are kept completely dry, a condition not easily attained with water ice. In utilizing the full insulating value of dry carbon-dioxide gas, jackets are constructed around the refrigerated space to hold the gas more or less definitely in place, and to allow it to be vented to the outer air at the highest temperature of the cooled space. This is in distinct contrast to water ice the effluent of which, having a high specific heat, leaves the refrigerator at about its lowest temperature, carrying with it valuable but unused cooling capacity.

Temperature Equalization

The fact that solid carbon dioxide yields a dry gas by evaporation and one which is inherently much heavier than air is being applied effectively to the equalization of temperature in a compartment such as a freight car where the ratio of its length to its width is high. The weight of carbon dioxide induces a comparatively strong draft in a very short head, and in this way the gas from the melting ice can be made to carry the cooling effect to remote parts of the refrigerated space. By introducing air or even warm carbon dioxide into the refrigerant compartment, the rate of evaporation of the ice blocks can be accelerated almost at will. The suction caused by the difference in head of the carbon-dioxide-air mixture in the duct systems induces a strong draft of air into the refrigerant chamber, and by controlling this with a suitable damper, an extremely uniform low temperature can be easily maintained throughout the space. Similarly the generation of a positive pressure within the cooled space effectively reduces air leakage into it.

In transporting perishables, it has been found that the addition of carbon dioxide to the atmosphere of the car greatly impedes the growth of most of the micro-organ-

* Paper presented by the Railroad Division at the annual meeting of the American Society of Mechanical Engineers, New York, December 3 to 7, 1928.

isms which cause spoilage. Thus, it is actually possible in many cases to transport perishable materials safely in an atmosphere of carbon dioxide at a higher temperature than that required for their preservation in an atmosphere of ordinary air.

Of course, it is of major importance in connection with this new product to know what the possible cost of such a refrigerant will be. At the present time the average price in the United States is a little higher than $100 per ton and even at this price it is finding an acceptance in the ice cream field and the trucking field so that last summer approximately 35 tons of solid carbon dioxide were sold in the eastern portion of the United States. The success that has attended the introduction of this refrigerant has caused a great deal of thought to be given to new methods of manufacture, and while it is usually dangerous to attempt to prognosticate the future cost of a product that is coming into public demand, I do not believe that the ability of the engineering profession is over-rated when it is stated that there will probably be found methods to manufacture this product so that it may be sold for less than $15 per ton.

At the present time approximately 95 per cent of the solid carbon dioxide that is manufactured is being used in the ice cream industry. For mail and express shipments solid carbon dioxide is rapidly establishing itself as an economical and very desirable refrigerant for such movements of perishables. Ice cream, butter, meat, and meat products are now being shipped in large quantities. In the field of truck refrigeration, which is competing so strongly with railroad transportation for short hauls, solid carbon dioxide has made rapid strides.

Advantages of Solid Carbon Dioxide For Railroad Refrigeration

Prior to 1880 products requiring refrigeration were shipped only in cool weather. Even after 1890 the first refrigerator cars were crude affairs, poorly insulated and leaky, so that the spoilage in lading was high. Long strides have been made in this art since then and spoilage has been reduced to a minimum, but still there are a multitude of problems confronting the car builder and shipper. Some of the more outstanding of these refrigerator car problems may be summarized as follows:

1—Uniformity in temperature in all parts of the car is desirable. At present the top layer of lading is often damaged by insufficient refrigeration.

2—Uniformity in temperature within the car during the whole time of shipment. For example, should the temperature of the air within the car rise above that of the lading, the lading in certain cases (such as meat) will sweat and deteriorate.

3—Both excessive humidity and excessive dryness are detrimental. This problem comes up particularly when the refrigerating medium is much below the freezing point of water.

4—Speed in precooling of cars is an important item, particularly where track facilities are crowded as in packing plants and in fruit-growing areas during a short ripening period.

5—Speed in cooling the lading is especially necessary in handling fruits and vegetables. Unless precooled, these products come to the cars normally at a high field heat and, if not cooled rapidly in the car and sufficiently ventilated to remove the stagnant air surrounding them, they tend to spoil rapidly.

6—Ventilation plays an important role in the handling of perishables. To ventilate without letting in the heat of summer, or the freezing cold of winter is quite a problem.

7—Refrigerator cars with long intervals of time between their periods of refrigeration are likely to become breeding places for flies and other vermin. Their non-metallic lining and porous insulation walls increase the hazard of this undesirable condition.

8—The weight of refrigerator cars is necessarily greater than that of other freight cars, running about 55,000 lb., while box cars run about 45,000 lb. Added to this is the non-paying load of ice of from 7,000 to 11,000 lb.

9—The time the commodity is in shipment becomes a problem to the shipper awaiting his money turnover, to the refrigerator-car owner, and to the railroads. The necessity for re-icing every two days—and even daily—brings about an appreciable delay in handling perishables.

10—The dripping of the meltage from the ice used is quite a problem as indicated from the following quotation from the *Railway Age* of March 8, 1928. The report of the A.R.E.A. Committee on Track, states:

"It is anticipated that the use of salt in cars other than meat cars will continue to increase, and as a consequence brine drippings will continue to damage rail, track fastenings, bridges and interfere with signals unless protection is provided.

"Information obtained from various railroads indicates that no one protective coating has been found which is entirely satisfactory.

"A possible solution of this problem is the use of some refrigerant other than ice, preferably one which has no deleterious effect on refrigerator cars, track structure, and the products which are being shipped. One such possible refrigerant is solid carbon dioxide (so-called dry ice). The cost of this material is as yet so high that its use as a substitute for ice and salt or ice alone may not be justified, but the satisfactory results obtained from its use and the increasing extent of its use promise increased manufacturing facilities with a possible decrease in cost, which makes it a promising possibility for refrigerator-car shipments."

It is the opinion of many in the car industry that solid carbon dioxide will help solve not only the corrosion problem as indicated above but many of the other problems as well. For its satisfactory use in refrigerator cars it appears at the present time that a car of special design must be used. This design incorporates an insulated bunker occupying a part, if not all, of the space now occupied by water-ice bunkers and some methods whereby the gas evaporating from the solid may surround the contents of the car. As in all new enterprises, a large amount of development work is necessary. This has been undertaken by one of the largest car builders in the United States and considerable progress has been made. Up to the present time it has been demonstrated that meat products can be carried satisfactorily with a relatively small amount of solid carbon dioxide, and while the car has not been perfected to a point where solid carbon dioxide at $100 per ton is an economical possibility, there seem to be surprisingly few outstanding reasons why solid carbon dioxide will not serve as a satisfactory refrigerant. As soon as the development work has proceeded a little further on this initial car, interesting results will be available.

There have been outlined many of the problems that are found in the design and operation of refrigerator cars. Solid carbon dioxide assists materially in solving many of these problems. For instance:

1—It is possible to distribute the cold gas within a car so that a relatively uniform temperature in all parts of the car is possible

2—There is little or no variation in temperature within the car from day to day and little fluctuation due to external temperatures

3—Should closer control of temperature be desired, the product lends itself readily to the use of thermostatic control. The great temperature difference between the solid carbon dioxide at 109 deg. below zero and the refrigerated products, which is usually above 32 deg. F., permits the use of a very simple temperature control that insures uniform refrigeration no matter how high the outside temperature may be. Further, it is possible because of this "reserve" of refrigeration to hold a lower temperature practically the full height of the car rather than refrigerating safely only the lower one-half to two-thirds of a car as at present with water ice. This uniformity of refrigeration both under the condition of hot weather and uniformity of refrigeration for the total height of the car will eliminate the two major causes of damage due to spoilage in transit.

4—Being intensely cold, speed in cooling is possible.

5—The time of shipment can be cut down materially inasmuch as the cars require no re-icing in transit, initial icing having been found sufficient to carry the car for more than a week

6—A real saving in weight of a refrigerator car is to be expected, this being brought about largely by the fact that a relatively small amount of this ice does the work of several tons of water ice.

7—There is no moisture connected with this ice. For that reason there is no drippage with its resultant deterioration of cars or tracks

8—It has certain advantages over mechanical refrigeration in that there are no moving parts to get out of order and no possibility of leaky refrigerating pipes to spoil the lading and the product, is comparatively foolproof, and does not require the attention of skilled mechanics.

The natural question that will arise, particularly in view of the bulletins published by the United States Department of Agriculture regarding the effect of solid carbon dioxide upon fruits and vegetables, is whether this refrigerant is perfectly safe for all kinds of lading. It has been found that certain preparations of carbon dioxide gas are beneficial in most cases. However, because this is a new art, definite information on this subject is not available. The present cars are so designed that the carbon dioxide does not enter the interior of the car and does not come in contact with the product. Should it be found advantageous to have definite amounts of carbon dioxide within the car, arrangements could be made to supply whatever percentage of the gas is necessary.

To sum up, it has been demonstrated that in the car refrigeration field, solid carbon dioxide can bring about an improvement in the quality of refrigeration, a saving in maintenance, and an economy of time, space, weight and probably actual cost of refrigerant.

Discussion

A considerable part of the discussion pertained to the lack of moisture with solid carbon dioxide refrigeration. It was pointed out that the shippers of a number of commodities, especially green vegetables, considered body icing a very important item in the preservation of the lading while in transit. One of the members from a western railroad stated that the shippers of lettuce insisted on body icing in order to keep the lading moist. With this practice, ice in quantities from one to as much as eight to ten tons, is placed in the body of the car, which frequently releases sufficient water to cover the floor more than 1½ in. deep. In reply, Mr. Martin said that the problem of providing moisture for such commodities was now being worked on by engineers from the manufacturers of solid carbon dioxide, one large builder of refrigerator cars and several shippers. At the present time, he said, only one refrigerator car built for solid carbon dioxide refrigeration was in service. This car is at present in experimental service on the Chicago, Milwaukee, St. Paul & Pacific.

Difficulties in design were also discussed, one of the most important problems still to be solved being that of constructing a gas-tight jacket entirely around the inside of the car. At the present time, Mr. Martin said, it was believed that a jacket of this design was necessary in order to obtain uniform temperatures in all parts of the car. He was confident, however, that some method of securing this desirable feature, as well as moisture control, would eventually be worked out.

Accidents Investigated in August

THE list of accidents investigated by the Bureau of Safety, Interstate Commerce Commission, in August, 1928, includes five collisions and one derailment. The most notable accident of the month, the derailment on the Illinois Central at Mounds, Ill., on August 6, in which eight persons were killed and 144 injured, was reported in the *Railway Age* of August 25, and the report of the Bureau of Safety on it was summarized in the issue of November 10, page 943. The reports on the five collisions are abstracted below:

Wabash, Valley City, Ill., August 3, 8:08 a.m.—A westbound freight train which had stopped to take water and was somewhat delayed in starting, was run into at the rear by westbound passenger train No. 3, wrecking the caboose and one car. The fireman of the passenger train jumped off and was killed and one other employee was injured. The line is operated under the manual block system and the failure of the operator at Bluffs to deliver a caution card to the passenger train, indicating that it was entering an occupied block, was the primary cause of the collision; but the inspector names, as the first at fault, the flagman of the freight, who might have gone back farther than he did; and the freight conductor is also censured for attending to his clerical duties in the caboose when he ought to have been taking care to see that the flagman was giving suitable protection. The operator at fault was an extra operator but had had 15 years' experience and had worked at this station several times before. The investigation brought out the fact that caution cards given to trains entering an occupied block section, were issued on the Springfield division in the month of August to the number of 1,895, of which 123 were issued through the operator at Bluffs.

Piedmont & Northern, Buncombe, S. C., August 11, 3:24 p.m.—Southbound freight train, extra, 5501, consisting of one electric motor and five box cars, moving at about five miles an hour, collided with northbound passenger train No. 6, consisting of electric motor coach 2107 and one other coach, moving at about 30 miles an hour, badly wrecking all of the cars; and both motors were badly damaged by fire which broke out in the wreckage. The motorman of No. 6 was killed and one employee and 20 passengers were injured. The freight was on the time of the passenger, having started for River Junction with insufficient time. The conductor and motorman asserted that they had not forgotten train No. 6 but the conductor's watch had been broken and the engineman's watch had stopped, and there was an error of 20 minutes, more or less, in their calculations. The report goes at length into details of the time that various actions took place, but with no very clear conclusion. Both conductor and engineman, however, had ignored the rule requiring them to clear a superior train five minutes. It did not appear that there was anything wrong with the motorman's watch other than his apparent failure to wind it on the previous evening. The railway company is called upon to make sure that a similar misunderstanding of rules does not exist with respect to other employees.

Missouri Pacific, Waring, Kan., August 20, 9:32 p.m.—Westbound passenger train No. 13, which had been ordered to wait at Waring until 9:37 p.m., ran past the station, disregarding that order, and collided with eastbound extra freight 1500, both trains moving at good

speed. The leading car in the passenger train, a wooden baggage car, was crushed, three cars in the freight train were demolished and much other damage was done. The engineman on No. 13 and two brakemen of the freight, riding on the engine, were killed and 32 passengers, three employees and one trespasser were injured. The blame is placed on the engineman and conductor of No. 13; and a contributing cause was the failure of the freight to flag the passenger when running too near its time. According to the wait order, No. 13 should have waited at Waring until 9:37; the freight conductor planned to reach the switch at Waring about 9:32 and then to flag the passenger train. The government inspector had to deal with much conflicting evidence as to the time that the collision happened but by the aid of the testimony of dispatchers and operators as to when the telegraph wires were disturbed by the collision, he fixed the time at 9:32 or 9:33. The fireman of No. 13 had been in the service less than a month, and although he had read the meet order and knew what was transpiring, he did not know when his train passed Waring. He said the engineman did not sound the station whistle signal nor the wait-order signal, but he, the fireman, was "engaged in putting in a fire", and took no thought of the opposing train. The front brakeman on the freight also had less than one month's experience. The conductor of No. 13 depended on the sounding of the whistle signal approaching the waiting point and, therefore, paid no attention to the location of his train after departing from the last station, McCracken. Had he been on the alert, undoubtedly he could have stopped the train when the engineman neglected that duty. The conductor's carelessness was due partly to his assumption that a stop for the purpose of taking coal had surely taken up enough time to comply with the wait order. He did not notice that his train was running at excessive speed, but said that possibly this was because the rails along there had just been renewed and the passage of the wheels over the joints was not noticeable. The wait order was not sent to the several stations at which waits were specified, which should have been done if practicable. The dispatcher said that he understood that where more than one wait was named in an order, this was not required, but the general superintendent said that it is required. There was an operator on duty at McCracken, where the train was to wait until 9:27, but none at Waring, where it was to wait until 9:37.

Chicago, St. Paul, Minneapolis & Omaha, Stillwater, Junction, Minn., Aug 23, 12:16 a.m.—A locomotive standing on a cross-over was struck in the side by eastbound passenger train No. 510, and the passenger engine was overturned. One baggage car was wrecked and three other cars much damaged. The engineman of this train was killed and 11 persons were injured. The engineman and fireman of the light engine are held responsible, the movement into the cross-over having been made when the passenger train was due. The engineman claimed to have read the time 11:15, by his watch, when apparently it was 12:15. The fireman, an employee of only 11 month's experience, was sent to set the switches of the cross-over and he had violated the rule requiring, in such cases, that both switches be kept open until the movement should be completed. The cross-over rails were electrified at each end but there was a dead section in the middle, and the engine had stopped on the westerly portion. The fireman also had, without doubt, opened the switch when the switch indicator showed that the passenger train was approaching.

Hocking Valley, Cummings, Ohio, August 26, 4:58 a.m.—A northbound freight train moving slowly through a long siding, during a dense fog, was allowed to run a short distance beyond the fouling point at the outgoing end, and its locomotive was struck by a southbound passenger train, which came along within 1 or 2 minutes at full speed; overturning the passenger locomotive and doing much other damage. The fireman of the passenger train was killed and 16 persons were injured. The engineman of the freight is held responsible for the collision. He had missed some of the landmarks on the siding, which was a mile long and perfectly straight, and is held blameworthy for not stopping his train as soon as he was in doubt about his location. He ordered a brakeman forward to flag the passenger train but this brakeman started out with a white lantern, then came back for a red one, and so used up all his time until too late to stop the passenger train. This brakeman, therefore, is held responsible for not at least mitigating the severity of the collision; and the engineman of the passenger train is also held responsible for approaching the manual block signal (which was at the station, very near the point of collision) at such speed that, considering the fog, he would not have been able to stop if the signal had been against him. The operator testified that he had set the signal against the passenger train, after discovering that the main track was obstructed. The fireman of the freight failed to keep a lookout as he should have done under such foggy conditions. The operator's office at Cummings was found not to have a red light in readiness for immediate use in hand signaling, as required by the rules.

Agreement Reached on Motor Coach Regulation Bill

WASHINGTON, D. C.

THE committee on interstate commerce of both the House and the Senate are expected to begin hearings shortly on a new bill for the regulation of motor coach transportation, to take the place of the Parker bill on which hearings were held at the last session of Congress. An agreement on a draft of the new bill, to be suggested to the chairman of the House and Senate committees as a substitute, was reached by representatives of the railways, motor coach operators and manufacturers and state commissions, following a series of conferences in Washington and both committees have arranged to hold a new series of hearings on the modified bill. The Senate committee is to hold its hearing after the holidays, following the completion of the coal hearings now in progress.

The new proposed bill is not much different in principle from the bill considered at the last session, but it is limited to passenger motor coach transportation and is simpler in many respects than the earlier bill. It provides for the creation of joint boards of state commissioners, acting as federal agencies, to administer its provisions, and to render decisions to be filed with the Interstate Commerce Commission, which would then issue certificates or orders in accordance with the decisions of the joint board unless a party shall file notice of an appeal to the federal commission.

A declaration of policy is included that nothing in Section 500 of the transportation act shall be construed to express a policy of Congress in favor of any other form of transportation as against transportation by motor vehicle or to affect in any manner the issue of a certificate under the proposed act, if the issue of such certificate, after all pertinent facts and circumstances have been duly considered on their merits, is deemed proper in the public interest, and that nothing contained in the bill shall be construed as a declaration by Congress of

the relative importance to the public of the several kinds of transportation.

Operators of motor coaches would be required to obtain a certificate of public convenience and necessity, except that carriers in operation on the date of approval of the act would be given 90 days in which to file applications for certificates and the right to continue in operation until their applications have been finally decided. A carrier, or its predecessors in interest in bona fide operation over any route on November 1, 1928, and continuously operating since that date, may furnish the commission with information showing that its operations are bona fide for the purpose of furnishing transportation to the public and continuing the same for a reasonable period. If the commission is satisfied it shall issue a certificate as a matter of course but if not satisfied shall refer the matter to a joint board for decision.

In determining whether or not a certificate should be issued, the joint board and the commission would be directed to give reasonable consideration, among other pertinent matters, to the convenience of and necessity to the public of the service by motor vehicle applied for and to existing available transportation agencies and service.

Provision is made for publication of rates but not for their regulation by commissions.

Relief from the operation of anti-trust laws is provided in the case of the holder of a certificate in so far as it may be necessary to enable it to own, control and operate, either directly or through a subsidiary corporation, motor vehicles upon the public highways.

Thomas H. MacDonald, chief of the Bureau of Public Roads of the Department of Agriculture, has issued a statement expressing the opinion that "we have been thinking and acting in terms of restrictive regulation too long" and that a further and much broader study should be made before restrictive legislation is made effective as to motor vehicle regulation. He did not suggest a removal of restrictive regulation from the railways but said that "it cannot correctly be assumed that highway and railway regulations run parallel."

"The demand for laws regulating the interstate motor vehicle operations on the highways, not only comes from those in control of other types of transport than motor vehicle, but from the operators of motor transport themselves. But the object in both cases is to limit and control competition," he continued.

Pointing out that both steam and electric railways will become extensive users of the motor truck and motor bus, Mr. MacDonald suggested that, before any federal legislation is enacted regulating the interstate motor vehicle operations on the highways, three questions be carefully considered:

Is competition between the different forms of transportation, for one of which the public is furnishing the roadway facilities, a proper cause for restriction through legislation?

Is it acceptable public policy to grant through such legislation franchises to all those now operating but to reserve the right to grant franchises to those who seek to establish a new service?

Has there been sufficient study and investigation by experts in highway transport to justify projecting the federal government into essentially local problems?

"The only inquiry into the development and operation of commerce, particularly interstate commerce, over the highways," said Mr. MacDonald, "was the series of hearings conducted by a member of the Interstate Commerce Commission, to which the railroads were made respondents. On the evidence thus secured certain recommendations as to federal common carrier legislation were made. Prior to these hearings a bill had been introduced and hearings were held by the Senate committee on interstate commerce. These original proposals were not based on any inquiry and were plainly proposed to limit the competition of the commercial motor vehicle with the railroads and with existing motor transport operations. Based on the recommendations of the commission after the inquiry, new legislation was introduced at the last session of Congress and is now pending before the House committee on interstate commerce. The new proposals are materially different from the original bills. It is reasonable to believe that a further and much broader study should be made before restrictive legislation is made effective. Before experimenting with federal legislation in this field, serious thought should be given to the economic soundness of the course to be followed."

* * * *

On the Pennsylvania at Harrisburg, Pa.

Communications and Books

They Put Him to Bed Too Soon

NEW YORK.

TO THE EDITOR:

The writer recently completed a little over 6,000 miles of railroad travel, and has come to the conclusion that the Pullman Company sends its patrons to bed too early. Perhaps this is one of the reasons why people travel by automobile and bus.

When one proceeds to the dining car for his evening meal, he is apt to find his berth made up on reaching his car again. One does not like to retire at 7:30 p.m. when his usual time is 11 or after. This practice results in a small crowded smoking room, and the passenger is, therefore, forced to stand in cold vestibules or sit in his berth.

As you know not all trains are provided with club or observation cars. Why should not porters be instructed to ask passengers when they wish to have their berths made up?

LAWRENCE J. CALLANAN.

Narrow Gage Articulated Locomotive Retired

TO THE EDITOR:

I have read with interest the article on the electrification of the Boston, Revere Beach & Lynn Railroad in the *Railway Age* of November 10, page 933. The electrification of this unique narrow gage road presumably implies the sale or scrapping of the steam locomotives formerly used. In this connection I would suggest that one of these locomotives be presented to an industrial museum or preserved by the railroad company, for the reason that to the mechanical engineer or the student of locomotive development they are of more than ordinary interest.

These locomotives are of the "Mason-Fairlie" type, first introduced by the famous builder, William Mason, of Taunton, Mass. In this design the drivers and cylinders are carried by a truck frame pivoted under the boiler, while the rear end of the locomotive, including the fuel and water supply, is supported by a four-wheel arch-bar truck of the usual type. The steam and exhaust pipes are provided with flexible joints. The valve gear is a peculiar modification of the Walschaert's motion with the reverse shaft on top of the boiler and connected to the radius rods by long vertical links with ball and socket pins which take care of the relative motions of the various parts of the gear in passing around curves.

Mason to a certain extent anticipated the modern articulated locomotive. He produced a remarkably flexible engine, well adapted to narrow gage roads, which in the early days were often laid with sharp curves and light rails. As a matter of fact, the Mason-Fairlie locomotives were most widely used not in the East, but upon several of the pioneer lines in the West and South. So far as the writer knows, the engines of the Revere Beach road are the only ones of this type now in existence.

The Eames vacuum brake, once a formidable rival of the air brake, and years ago in service on several lines, and particularly upon the elevated railroads in New York City, was also used on these engines. Other equipment includes the old style steam-chest oilers instead of the usual sight-feed lubricator or mechanical pump. These peculiarities are well shown in the photograph which was taken several years ago at the engine terminal at Orient Heights, Mass.

The tremendous public interest shown in the old locomotives exhibited by the Baltimore & Ohio at the "Fair of the Iron Horse" last year proves that it is worth while to save some of these veterans of the rail from the junk heap. The far-sighted policy of the above road might well be followed by others, particularly in the case of locomotives or other equipment which mark the progress of design or have helped to make railroad history.

HUGH G. BOUTELL.

The Traveling Engineer as an Instructor

BALTIMORE, MD.

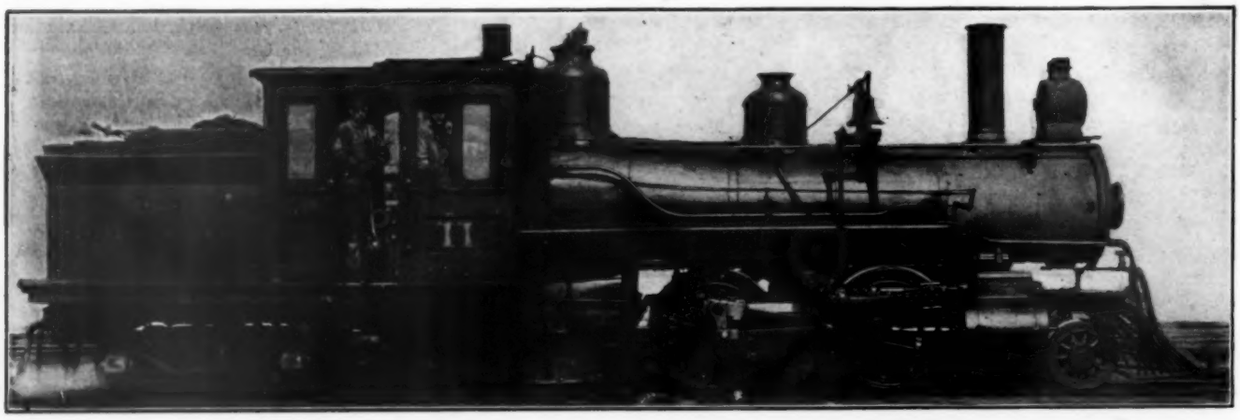
TO THE EDITOR:

Your editorial in the November 3 issue of the *Railway Age*, "The Traveling Engineer as Instructor," has been read with interest and approval.

I think it is not possible to overstress the point that efficient locomotive performance depends upon the effective functioning of the personnel in charge of the operation of the locomotives to at least as great an extent as upon good operative condition of the locomotives. To this end, it is obviously necessary to insure that traveling engineers or road foremen of engines are kept well informed upon new developments in locomotive design and equipment and the resultant modifications in manipulation required, and that they be given ample opportunity to instruct locomotive enginemen and firemen on such details.

You make the well-taken point that overloading these officers with duties and responsibilities tends to confine their activities to the investigation of troubles that are past, rather than to encourage instruction of engine crews and the forestalling of difficulties. There can be no question that prevention is better than remedy in this department of railroad operating activity.

Many railroads, I believe, are alive to the advisability of providing enough supervision to cover the operation of their locomotives on line of road properly and also allow time for



Mason-Fairlie Locomotive of the Boston, Revere Beach & Lynn

educational activities. Road foremen on such roads, regularly attend the divisional operating and mechanical staff meetings, receive copies of the mechanical circulars and drawings covering modifications of locomotive design or equipment, meet for periodical reviews of information on such features as new appliances, breakdowns on new locomotives, etc., and are given opportunity to attend the conventions of the associations and gather information and inspiration from the contact with those engaged in the same line of work on other railroads.

Appreciation of the value of the educational feature in the improvement of locomotive and fuel performance must, I think, lead inevitably to the policy of providing one or more officers on each division to function primarily as instructors of locomotive engineers and firemen, extending their knowledge of their work and improving their effectiveness by force of example and demonstration on the spot, as well as by reviewing standing instructions and explaining the operation of new appliances.

W. L. ROBINSON,
Supt. Fuel and Loco. Performance, Baltimore & Ohio.

Books and Articles of Special Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

"The Greatest Law-Suit in History"—A Discussion of the Issues Involved in the St. Louis & O'Fallon Railroad Valuation. 24 p. Pub. by Jas. H. Oliphant & Co., New York and Chicago, *Apply.*

List of Bridges Over Navigable Waters of the United States 1927, compiled in the Office of the Chief of Engineers, United States Army. Bridges, located, designated by type, and by service, i.e. railway, highway, etc. Eight pages are required to list bridges over the Mississippi alone. 481 p. Pub. by U. S. Govt. Print. Off., Washington, D. C., $1.

Past-Presidents' Bulletin, American Railway Engineering Association, Vol. 30, September, 1928. "Foreword" by W. D. Faucette, "Historical Notes" by G. W. Kittredge, "A Travelogue" by Hunter McDonald, "Fundamental Education for Industrial Enterprise" by W. C. Cushing, "Early History of 'The American Railway Engineering Association'" by L. C. Fritch, "Progress in the Greatest Half-Century, 1878-1928, and Some Considerations of a Proper Beginning of the Next One" by Chas. S. Churchill, "Federal Valuation of Railroads" by Edwin F. Wendt, "Is There a Road to Plenty?" by John G. Sullivan, "Requisites of an Engineer" by C. A. Morse, "A Suggestion" by Earl Stimson, "The A.R.E.A.—Its Past, Present and Future" by H. R. Safford, "What It is All About" by J. L. Campbell, and "The Value of Judgment and Discrimination" by E. H. Lee, comprise the interesting contributions to this innovation in bulletins. A list of the 26 past-presidents is on p. 2. Memoirs of H. G. Kelley, J. B. Berry, and Howard Elliott are also included. 89 p. Pub. by the Association, Chicago, Ill., $1.

Periodical Articles

Railroad Consolidation Problems in Great Britain and America, by Howard C Kidd. Compulsory vs. voluntary consolidation, the machinery of grouping, financial arrangements, value, and results of consolidation in Great Britain. Pittsburgh Record (University of Pittsburgh), December 1928, p. 21-25.

Electrification of the Mumbles Railway, Wales, Completed, by John J. C. Watson. "The Oystermouth Railway, popularly known as the Mumbles Railway, was authorized by an act of Parliament on June 29, 1804, and claims to be the oldest railway line in existence....It is also unique in the variety of vehicles it has used and the motive power it has employed for their operation...." p. 739. Illustrated. Commerce Reports, December 17, 1928, p. 739-740.

Looking Backward

Fifty Years Ago

An Illinois railroad has reversed the usual order of things and presented a bill for $700 damages to a farmer whose horse got on the track and wrecked a train.—*Railroad Gazette*, December 20, 1878.

The Northern Pacific is to be extended from the Missouri river to the Yellowstone river, about 200 miles. The directors opened 48 proposals for the construction of the first 100 miles to be completed by November 14, 1879, awarded the contract to the lowest bidder and ordered a revision of the surveys for the second 100 miles, preparatory to letting the work on that.—*Chicago Railway Review,* December 21, 1878.

The Houston & Texas Central, the Texas & Pacific, the Galveston, Houston & Henderson, the International & Great Northern and the Galveston, Harrisburg & San Antonio have entered into an agreement under which they will consider a car-load of freight to be 20,000 lb. Cars loaded to 22,400 lb will be received and the additional 2,400 lb. will be charged for at double its class rate.—*Chicago Railway Review,* December 21, 1878.

The tendency of the railway to supplant the canal is again illustrated in the decision of the James River & Kanawha Canal Company to deed the canal to the Richmond & Allegheny (now part of the Chesapeake & Ohio), a new corporation which has been chartered to take the canal, draw off the water and lay a railway track in the bed of the waterway from Richmond, Va., to Buchanan, 196 miles. It is also planned to extend the railway from Buchanan to Clifton Forge, 20 miles in order to connect with the Chesapeake & Ohio at the latter point.—*Railway Age,* December 19, 1878.

Twenty-Five Years Ago

George F. Brownell, general solicitor of the Erie at New York, has been elected first vice-president and general solicitor, succeeding Daniel Willard, first vice-president and general manager, who has been elected second vice-president of the Chicago, Burlington & Quincy, with headquarters at Chicago. T. B. Hamilton, division superintendent on the Pennsylvania at New Castle, Pa., has been transferred to the Cleveland & Pittsburgh division at Cleveland, Ohio.—*Railway Age,* December 25, 1903.

The Interstate Commerce Commission, in its report for the year ending June 30, 1903, states that the Elkins law has proved beneficial from the day it was passed and observes that "never before in the railroad history of this country have tariff rates been so well or generally observed as they are at the present time." Complaints made to the Commission during the past fiscal year were more than double those of the previous year and more than four times the number received the year before. —*Railway Age,* December 25, 1903.

Ten Years Ago

S. M. Felton, who as director general of military railways has had charge of the organization and despatch abroad of all railway forces and the purchase of all railway material for the American Expeditionary Forces, has resigned effective December 31 and will return to the Chicago Great Western as its president.—*Railway Age,* December 20, 1918.

Director General McAdoo's proposal that the government keep the railroads for another five years has brought the question of private or government operation of the railroads squarely to the front, where an effort will be made in Congress to settle it on its merits, but prospects for legislation at the present session now appear slim as an impression prevails that it is more important that the question be settled right than that it be settled quickly. At this date Congress does not seem to be deeply moved by the suggestions thrown out by the President and the Director General.—*Railway Age,* December 20, 1918.

Odds and Ends of Railroading

Electrification by the Pennsylvania railroad of 325 miles of line and 1,300 miles of track, as recently announced by President Atterbury, will call for the use of approximately 55,000,000 lb. of copper, the Copper and Brass Association estimates. This is more than the entire copper production of the United States half a century ago. In 1876 the nation's total output of the metal was about 49,000,000 lb.

Everything Snug

The "Thames-Forth," L. M. S. Scotch Express, the first coach of which bore the destination board Aberdeen, pulled into Sheffield station the other day. An old lady put her head out of a window in the second coach and said to a porter:

"Do you think it is safe traveling so near the engine?"

"Yes, lady," said the porter, looking at the first coach, "the front carriage won't give!"—*Railway Gazette.*

A Novel Maintenance Problem

During the recent eruption of Mount Etna maintenance of way men on the Messina-Catania Railroad in Sicily were called upon to face a unique problem. Their line near Carrabba was buried for 100 ft. by the stream of molten lava rushing down the mountainside. Engineers in this country know that almost anything "onery" can happen to a stretch of track, but, for the present at least, they need hardly fear such an occurrence as this.

Yes, There Must Be a Santa Claus

A herd of 30 reindeer from the snow-white fields of Alaska arrived at Seattle, Wash., this fall consigned to Newark, N. J., and have begun their journey across the continent via the Northern Pacific's Atlantic Express. These reindeer are to be used to furnish Yuletide atmosphere in the large department stores in and around New York during the holiday season. If some of these commercial enterprises could be persuaded to import a few Eskimos and igloos, the railroads might develop a nice increase in their passenger and refrigerator car business.

"Blue Caps" Supplant "Red Caps" at B. & M. New North Station

It will be the "Blue Cap" instead of the "Red Cap" at the new North Station of the Boston & Maine in Boston for the red cap, for years the symbol of the porter in railway terminals of the United States, is now supplanted by bright blue caps, trimmed with buff, as the uniform identification of the attendants at this station. The new caps also depart from the straight visored, straight sided head gear to take on a semi-formal military shape and are easily identified by a band of light buff leather.

"A Busman's Holiday"

All day long within his tower
Otto Friedrich Himmelbauer
Changed the jolly switch lights' sheen:
Green to red and red to green.
Otto Himmelbauer never
Erred in throwing of a lever
While beneath him engines sped:
Red to green and green to red.
On vacation he'd relax
Far away from railroad tracks
Where he spent his days and nights
Watching city traffic lights

Chicago Daily News

Much Ado About Nothing

A timekeeper on an eastern railway, while attending a staff meeting at the general headquarters, observed in the local paper an account of an accident on his division in which three employees were killed and much damage was done to the right-of-way. He returned home that night, excited and puzzled because the names of the employees were unfamiliar. He reported what he had read to the assistant superintendent, who was as much puzzled as he was, for no such accident had been reported. The account given in the paper was quite complete and circumstantial, and the mystery grew when an investigation disclosed that there had been no such accident and that the employees named were unknown. The paper carrying the account was procured and there, sure enough, was the report of the accident in all its lurid details. But, what the timekeeper hadn't noticed in his excitement was that it was in the column headed "Fifty Years Ago."

Gives Names to Scenery and Horse Express Cars

The Pennsylvania is giving individual and distinctive names to 45 new theatrical scenery cars and 25 horse express cars now being turned out of the Altoona works. The scenery cars will be named after great actors, actresses, musicians, singers and famous characters in dramatic and operatic productions. The horse express cars will bear the names of the great race tracks of the country. Among the scenery cars will be the "Edwin Booth," "John Drew," "Sarah Bernhardt," "Macbeth," "Faust," "Robin Hood," "Shylock," "Wagner," "Mozart," "Victor Herbert," "Caruso," and "Jenny Lind." Some of the horse express cars will be called "Havre de Grace," "Churchill Downs," "Belmont Park," "Pimlico," "Bowie," "Arlington Park," "Lincoln Field," "Beulah Park," "Saratoga Springs," "Jamaica," "Jefferson Park" and "Fairgrounds." The naming of these cars is a development of the policy recently inaugurated by the Pennsylvania when it gave characteristic names to the limited trains in its freight service. In some cases these names typified speed and certainty; in others, they had historic significance and still others related to the kind of service performed by the train or the territory through which it operated. The idea also has been extended to many Pullman cars operating in the company's limited passenger trains. These have been given names characteristic of the cities which they serve.

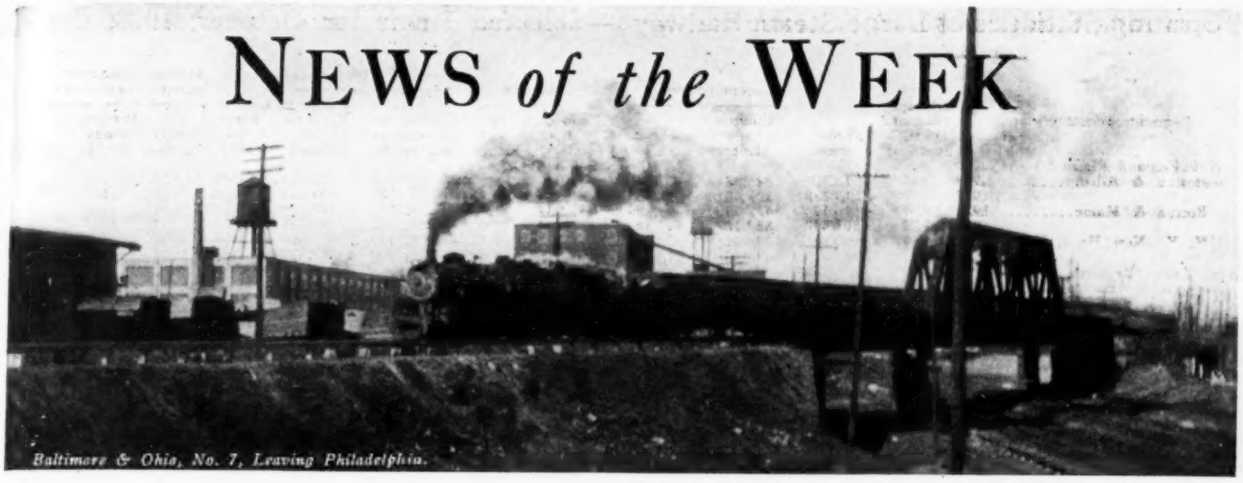
Another Model

The accompanying illustration shows a minature train which was built in the shops of the Chicago, Burlington & Quincy at West Burlington, Iowa. The train consists of a locomotive,

The Burlington Model Train

a tender, a mail-baggage car, a coach, a box car, a gondola car and a caboose. The train has traveled over a lot of country since it was built, being used as an advertisement and as a float in parades and celebrations. It is transported from place to place on two full-size flat cars.

NEWS *of the* WEEK



Baltimore & Ohio, No. 7, Leaving Philadelphia.

THE RAILWAY CLUB OF PITTSBURGH will hold its next meeting at Fort Pitt Hotel on Thursday evening, December 27. C. O. Bradshaw, vice president of the Robinson Connector Company, New York, will read a paper on automatic connectors.

W. B. STOREY, W. W. ATTERBURY, P. E. CROWLEY and C. R. GRAY, as agents for the participating railroads and the Railway Express Agency, Inc., have filed with the Interstate Commerce Commission, application for approval of the form of operating agreement by which the agency will conduct the express business as agent for the participating railroads under a plan providing a pooling arrangement or division of earnings.

Proposed Amendment of Recapture Clause

Representative Free, of California, has introduced in Congress a bill, H. R. 15,075, to amend the recapture provisions of the Transportation act so as to exempt Class II and III carriers, as of the date of the passage of the act in 1920, and to provide that in calculating excess income account be taken of years in which the net falls below 6 per cent as an offset against the years in which it exceeds that figure.

Collisions With Motor Vehicles to be Reported by Wire

The Interstate Commerce Commission has ordered a modification of its requirements as to the reporting of railway accidents so that on and after January 1 railroads will be required to report to it by telegram any collision or derailment resulting in the death or serious injury of one or more persons, including any collision with a motor vehicle at a grade crossing resulting in the death or serious injury of any passenger, employee or other person riding on the train involved.

Further Experiment with Alberta Coal

Subject to the exigencies of the grain movement, the experimental shipments of Alberta coal to Ontario under the $6.75 per ton rate will be extended in 1929 for a period of six months. The tests next year will begin on January 15 and continue until July 15.

This was announced at Ottawa last week by officers of the Board of Railway Commissioners, who, however, made it clear that the transportation companies would not give the coal shipments precedence over grain. The early months of the year constituted a period when the grain transportation business was particularly heavy.

C. & N. W. Safety Committee

The Chicago & North Western safety department has organized a safety committee composed of 6,500 employees. This committee is made up of 10 per cent of the persons in each department of the system, and each member is known as a field representative. The duty of these is to aid other employees and to report to the superintendent of safety at Chicago, cases in which employees have acted carelessly or have endangered their own lives or those of other employees. The field representatives do not report the names of persons assisted, or the violators of safety rules, but they send a card to the superintendent showing the number of times they have called attention to acts that might have resulted in injury.

C. & O. Seeks to Enjoin Guyandot Construction

The Chesapeake & Ohio has brought suit in the Federal court for the southern district of West Virginia to enjoin that part of the order issued by the Interstate Commerce commission in the Guyandot valley extension case which authorized the Norfolk & Western, through a subsidiary, to build an extension from Wharncliffe to Gilbert, W. Va., while denying the C. & O.'s application for authority to build an extension in the valley. The court is also asked to enjoin the N. & W., from building its line. It is contended that the record in the case contains no evidence that the public convenience and necessity require the N. & W. line and that the order was made without authority either in law or in fact.

November Locomotive Shipments

November shipments of railroad locomotives, from principal manufacturing plants, based on reports received by the Department of Commerce, totaled 35 locomotives, as compared with 36 in October and 52 in November, 1927. The following table gives the shipments and unfilled orders of locomotives for November 1927 and 1928, the 1927 totals and totals for the first 11 months of the two years:

RAILROAD LOCOMOTIVES

Year and Month	Shipments				
		Domestic		Foreign	
	Total	Steam	Electric	Steam	Electric
1928					
November	35	20	1	12	2
Total (11 mos.)	506	331	88	83	4
1927					
November	52	31	7	8	6
Total (11 mos.)	1,002	685	135	154	28
Total (year)	1,074	726	148	171	29

	Unfilled orders, end of month				
		Domestic		Foreign	
	Total	Steam	Electric	Steam	Electric
1928	152	104	31	17	
1927	145	74	42	25	4

Amended Consolidation Bill In Senate

Senator Fess, of Ohio, on December 19 introduced in the Senate a revised railroad consolidation bill, to take the place of the bill he had introduced at the last session. The new bill, S. 5029, is made up of the text of the Parker bill, reported by the House committee at the last session following extended hearings, with several amendments recently proposed by representatives of the Association of Railway Executives at a hearing before the House committee and in conference with Senator Fess, who is chairman of a sub-committee of the Senate committee on interstate commerce. One amendment would remove the prohibition against the acquisition by one carrier of securities of another in an amount not sufficient to constitute control, but with a provision that such shares shall not be voted on any question relating to unification without the approval of the

(*Continued on page 1250*)

Operating Statistics of Large Steam Railways—Selected Items for October, 1928, Comp

Region, road and year	Average miles of road operated	Train-miles	Locomotive-miles: Principal and helper	Locomotive-miles: Light	Car-miles: Loaded (thousands)	Car-miles: Per cent loaded	Ton-miles (thousands): Gross, Excluding locomotives and tenders	Ton-miles (thousands): Net, Revenue and non-revenue	Average number of locomotives on line: Serviceable	Unserviceable	Per cent unserviceable	Stored
New England Region:												
Boston & Albany	1928 407	210,331	225,038	23,755	5,600	69.8	289,230	114,412	103	18	14.9	33
	1927 407	210,120	225,403	24,383	5,389	67.8	280,128	108,054	106	15	12.7	6
Boston & Maine	1928 2,074	446,134	537,793	76,289	15,084	71.9	770,150	317,469	277	48	14.7	52
	1927 2,075	501,418	582,167	54,524	14,269	70.0	728,526	288,039	272	71	20.7	32
N. Y., New H. & Hart.	1928 2,112	566,510	638,911	37,930	18,407	69.3	988,715	423,807	308	57	15.6	45
	1927 2,141	590,531	644,448	41,779	17,511	68.4	919,030	377,172	340	51	13.0	62
Great Lakes Region:												
Delaware & Hudson	1928 875	361,558	486,707	49,967	11,622	67.8	726,614	368,426	235	42	15.3	70
	1927 875	365,615	499,657	58,305	11,055	66.2	691,809	346,841	248	33	11.8	73
Del., Lack. & Western	1928 998	601,864	684,143	82,189	20,881	70.5	1,156,009	498,772	238	57	19.4	7
	1927 999	603,971	689,281	83,257	19,994	69.9	1,119,502	485,988	241	54	18.2	8
Erie (inc. Chi. & Erie)	1928 2,317	1,041,964	1,142,310	112,279	47,985	66.3	2,829,375	1,187,130	426	109	20.3	8
	1927 2,317	1,100,890	1,198,963	97,399	44,814	65.0	2,696,829	1,113,044	441	147	25.0	3
Lehigh Valley	1928 1,346	650,711	717,776	81,563	21,154	65.1	1,274,019	564,399	324	86	21.0	27
	1927 1,345	631,282	689,943	84,744	19,976	63.8	1,214,868	526,463	354	81	18.6	44
Michigan Central	1928 1,822	606,747	627,181	22,874	21,774	62.8	1,225,345	449,325	196	51	20.5	21
	1927 1,820	575,667	593,967	22,081	18,889	61.8	1,077,996	393,429	227	63	21.6	54
New York Central	1928 6,459	2,203,184	2,483,846	173,155	86,145	62.5	5,341,318	2,276,246	964	384	28.5	159
	1927 6,478	2,058,950	2,304,276	175,620	82,857	62.8	4,969,801	2,092,052	1,081	292	21.3	289
New York, Chi. & St. L.	1928 1,665	645,436	652,613	7,920	23,096	68.0	1,257,242	495,929	227	51	18.4	57
	1927 1,665	643,246	651,323	8,628	22,567	66.8	1,230,951	465,467	240	50	17.3	62
Pere Marquette	1928 2,181	514,594	519,034	4,995	14,008	65.3	808,267	349,696	181	31	14.6	5
	1927 2,180	475,137	482,760	7,461	12,579	65.2	733,255	320,627	184	40	17.9	7
Pitts. & Lake Erie	1928 231	131,174	132,618	1,389	5,158	63.2	424,645	244,219	51	13	20.3	13
	1927 231	121,441	123,583	1,695	4,454	60.2	358,326	203,887	60	16	21.2	17
Wabash	1928 2,497	850,859	883,587	13,356	26,852	67.2	1,503,491	597,638	285	78	21.5	11
	1927 2,497	756,202	794,900	14,938	24,464	67.4	1,355,856	539,365	314	52	14.2	73
Central Eastern Region:												
Baltimore & Ohio	1928 5,534	2,204,375	2,631,621	196,720	68,185	62.7	4,543,279	2,166,439	989	250	20.2	58
	1927 5,540	2,146,653	2,547,911	227,463	65,022	61.3	4,343,078	2,037,810	1,040	218	17.3	78
Central of New Jersey	1928 691	301,932	327,608	50,067	9,178	59.0	626,657	301,312	180	29	13.7	22
	1927 691	278,758	305,644	50,738	8,303	58.1	551,163	260,631	187	28	13.1	22
Chicago & Eastern Ill.	1928 945	278,298	278,490	3,495	7,742	64.6	473,967	216,241	103	63	37.9	26
	1927 945	299,623	303,886	4,405	7,941	63.3	503,435	236,703	103	43	29.4	18
Clev., Cin., Chi., & St. L.	1928 2,370	790,417	816,933	18,892	26,079	62.1	1,674,780	778,617	324	108	25.0	32
	1927 2,374	784,485	818,136	21,688	25,251	61.0	1,656,505	766,264	334	96	22.3	24
Elgin, Joliet & Eastern	1928 461	146,662	153,388	7,230	4,291	65.1	316,355	167,320	76	17	17.9	1
	1927 461	129,184	136,847	6,032	3,787	64.9	285,890	148,687	82	11	11.9	4
Long Island	1928 396	59,397	59,793	15,023	864	58.1	55,212	22,134	54	7	11.1	...
	1927 396	53,407	58,130	16,203	787	59.4	49,457	19,722	50	12	19.8	...
Pennsylvania System	1928 10,749	4,455,467	5,078,096	469,123	160,517	64.9	10,518,774	4,930,514	2,752	334	10.8	573
	1927 10,844	4,633,506	5,121,799	413,656	151,209	63.9	9,850,529	4,511,878	2,892	361	11.1	622
Reading	1928 1,128	660,158	722,217	59,735	19,863	64.6	1,331,448	688,802	316	74	18.9	32
	1927 1,131	653,464	**710,676**	**69,149**	**17,893**	**60.4**	1,266,680	640,132	314	79	20.2	41
Pocahontas Region:												
Chesapeake & Ohio	1928 2,728	1,214,433	1,304,363	50,019	42,922	56.4	3,463,769	1,863,046	538	88	14.0	47
	1927 2,706	1,233,209	1,335,434	55,485	41,484	55.2	3,379,167	1,797,579	543	94	14.8	23
Norfolk & Western	1928 2,231	924,465	1,085,658	41,086	36,038	59.3	2,953,259	1,580,520	511	56	9.9	127
	1927 2,232	864,038	1,064,914	37,127	31,594	60.0	2,550,077	1,360,069	551	47	7.9	121
Southern Region:												
Atlantic Coast Line	1928 5,127	631,346	634,578	10,077	16,689	63.1	899,605	338,647	440	50	10.2	102
	1927 5,098	690,159	694,627	10,975	17,801	63.4	982,107	386,027	447	56	11.2	120
Central of Georgia	1928 1,898	278,620	281,796	4,119	7,216	75.4	362,316	152,563	142	20	12.5	12
	1927 1,898	281,102	282,840	6,732	7,517	71.6	391,028	163,893	143	19	11.5	15
Ill. Cent. (inc. Y. & M. V.)	1928 6,715	2,061,330	2,073,184	30,245	58,904	64.0	3,754,292	1,626,894	737	110	13.0	18
	1927 6,594	2,089,891	2,114,447	47,653	59,640	62.7	3,838,461	1,639,621	789	102	11.5	19
Louisville & Nashville	1928 5,061	1,692,628	1,773,590	57,361	38,329	60.2	2,641,881	1,290,962	607	98	13.9	43
	1927 5,048	1,828,032	1,906,482	62,112	38,931	58.9	2,710,055	1,295,259	625	105	14.3	11
Seaboard Air Line	1928 4,485	565,641	579,106	7,931	14,724	67.0	808,034	324,350	266	64	19.4	30
	1927 4,282	520,793	538,577	6,873	13,917	66.0	771,594	314,558	237	50	17.5	37
Southern	1928 6,679	1,571,435	1,605,175	32,772	40,436	68.0	2,188,806	906,896	842	116	12.1	124
	1927 6,718	1,523,732	1,553,739	32,839	39,548	67.2	2,136,466	868,200	838	118	12.3	84
Northwestern Region:												
Chi. & North Western	1928 8,463	1,661,781	1,749,494	28,824	45,562	62.8	2,686,054	1,070,709	762	130	14.6	60
	1927 8,470	1,686,727	1,782,645	32,113	45,208	64.1	2,664,839	1,039,141	793	126	13.7	66
Chi., Milw., St. P. & Pac.	1928 11,248	1,952,269	2,098,335	121,131	60,599	65.2	3,594,641	1,568,835	778	145	15.7	109
	1927 11,202	1,905,742	2,029,946	123,261	59,527	65.9	3,468,839	1,512,647	814	130	13.7	114
Chi., St. P., Minn. & Om.	1928 1,724	349,938	377,027	18,550	7,947	67.2	443,902	189,785	156	29	15.7	21
	1927 1,724	348,142	378,981	15,776	8,229	70.3	446,700	191,399	167	24	12.4	25
Great Northern	1928 8,303	1,451,279	1,498,698	98,391	54,695	63.2	3,563,441	1,642,149	547	89	14.0	14
	1927 8,164	1,313,435	1,355,478	75,940	49,918	62.2	3,216,178	1,459,145	596	80	11.8	60
Minn., St. P. & S. St. M.	1928 4,358	635,205	659,164	8,550	18,802	66.9	1,070,966	502,908	233	25	9.7	14
	1927 4,368	702,095	721,606	7,408	18,973	66.7	1,068,136	497,222	309	22	6.6	6
Northern Pacific	1928 6,478	1,067,677	1,141,080	67,629	37,045	68.4	2,150,425	957,885	471	103	18.0	15
	1927 6,476	1,064,327	1,130,433	60,519	36,131	67.9	2,115,417	956,677	483	130	21.2	22
Oreg.-Wash. R. R. & Nav.	1928 2,246	253,946	268,203	19,945	7,767	67.4	466,855	206,956	138	10	6.5	2
	1927 2,154	238,257	250,691	17,311	7,315	74.2	419,123	198,957	136	13	8.5	5
Central Western Region:												
Atch., Top. & S. Fe (incl. P. & S. F.)	1928 10,455	2,195,281	2,451,999	181,155	79,215	64.0	4,726,085	1,604,755	840	129	13.3	93
	1927 10,415	2,470,013	2,739,741	189,889	84,965	61.0	5,274,887	1,691,260	841	132	13.6	60
Chicago & Alton	1928 1,000	359,751	398,205	4,377	9,157	65.1	540,164	207,485	120	31	20.6	4
	1927 995	322,774	350,310	3,596	8,235	66.3	475,030	179,483	139	17	11.1	32
Chi., Burl. & Quincy	1928 9,317	1,761,451	1,826,643	72,098	57,645	63.1	3,398,265	1,536,167	713	182	20.3	28
	1927 9,334	1 811,013	1,895,224	81,094	56,849	62.6	3,355,387	1,505,190	754	164	17.8	29
Chi., Rock I. & Pacific	1928 7,564	1,501,389	1,569,204	19,580	39,995	65.3	2,303,618	960,666	559	113	16.8	45
	1927 7,575	1,401,790	1,466,670	16,380	38,463	66.6	2,166,042	903,849	550	123	18.3	47
Denver & R. G. Wn	1928 2,563	461,331	538,702	82,659	12,167	62.2	723,012	281,916	245	29	10.6	6
	1927 2,561	423,115	505,309	81,243	11,032	63.1	640,699	252,852	265	28	9.4	11
Oregon Short Line	1928 2,539	446,461	480,768	49,359	13,444	62.2	838,050	332,103	184	12	5.9	12
	1927 2,539	440,728	476,134	42,006	12,842	65.8	759,439	306,164	193	20	9.2	15
So. Pacific—Pacific Lines	1928 8,735	2,002,301	2,193,185	307,913	63,852	65.7	3,814,868	1,406,110	790	157	16.6	51
	1927 8,770	1,968,699	2,157,827	326,397	62,423	65.0	3,735,694	1,346,447	806	173	17.7	56
Union Pacific	1928 3,765	1,894,223	1,947,968	103,349	65,063	63.4	3,880,999	1,279,387	471	17	3.5	27
	1927 3,712	1,845,879	1,902,701	100,612	67,370	64.7	3,960,285	1,316,071	466	32	6.4	41
Southwestern Region:												
Gulf, Colo. & S. Fe	1928 1,933	267,242	276,851	8,812	9,476	65.1	556,122	232,342	127	16	11.3	33
	1927 1,933	314,433	322,421	8,979	10,080	61.4	631,653	268,488	144	20	12.2	36
Mo.-Kans.-Texas Lines	1928 3,176	523,367	533,535	12,674	18,038	61.1	1,053,842	414,970	188	57	23.4	43
	1927 3,176	464,488	469,693	9,708	15,561	61.6	898,757	349,714	215	32	12.9	83
Missouri Pacific	1928 7,433	1,533,239	1,596,657	47,402	45,569	66.3	2,648,889	1,123,925	540	96	15.1	11
	1927 7,331	1,484,339	1,529,973	44,726	42,152	64.1	2,523,370	1,067,944	570	81	12.5	34
St. Louis-San Francisco	1928 5,221	906,617	922,146	10,451	22,289	64.9	1,297,072	547,243	402	70	14.9	31
	1927 4,926	835,214	851,227	8,986	21,176	62.9	1,266,609	528,930	396	58	12.8	57
Texas & New Orleans	1928 4,708	814,516	815,729	2,957	19,380	67.2	1,086,227	435,253	280	59	17.3	41
	1927 4,553	794,329	796,713	2,687	17,822	62.8	1,063,143	422,344	262	50	16.1	31
Texas & Pacific	1928 2,015	554,532	554,532	4,192	15,213	59.6	980,944	393,074	200	16	7.2	19
	1927 2,015	362,168	362,168	2,815	10,840	66.1	629,907	252,718	170	25	12.7	18

Compiled by the Bureau of Statistics, Interstate Commerce Commission. Subject to revision.

ared with October, 1927, for Roads with Annual Operating Revenues Above $25,000,000.

Region, road and year	Average number of freight cars on line: Home	Foreign	Total	Per cent unserviceable	Gross ton-miles per train-hour, excluding locomotives and tenders	Gross tons per train, excluding locomotives and tenders	Net tons per train	Net tons per loaded car	Net ton-miles per car-day	Car miles per car-day	Net ton-miles per mile of road per day	Pounds of coal per 1,000 gross ton-miles, including locomotives and tenders	Locomotive miles per locomotive-day
New England Region:													
Boston & Albany....1928	2,112	5,864	7,976	3.4	19,102	1,375	544	20.4	463	32.4	9,067	160	66.6
1927	2,660	5,618	8,478	2.7	17,773	1,333	514	20.1	411	30.2	8,564	179	66.4
Boston & Maine....1928	9,194	13,775	22,969	4.1	20,641	1,726	712	21.0	446	29.5	4,938	107	61.1
1927	12,631	13,135	25,766	7.3	16,092	1,453	574	20.2	361	25.5	4,478	114	59.9
N. Y., New H. & Hart..1928	14,891	21,824	36,715	8.0	21,628	1,745	748	23.0	372	23.3	6,472	108	59.9
1927	19,000	20,500	39,500	11.7	19,206	1,556	639	21.5	308	20.9	5,684	115	56.7
Great Lakes Region:													
Delaware & Hudson....1928	7,272	6,954	14,226	3.5	23,849	2,010	1,019	31.7	835	38.9	13,583	136	62.5
1927	8,143	6,277	14,420	4.5	22,814	1,892	949	31.4	776	37.3	12,784	142	64.1
Del., Lack. & Western...1928	13,745	10,509	24,254	3.4	23,267	1,921	829	23.9	663	39.4	16,119	134	83.7
1927	15,672	9,813	25,485	4.0	22,324	1,854	805	24.3	615	36.2	15,688	134	84.7
Erie (inc. Chi. & Erie)..1928	26,200	25,302	51,502	3.9	33,896	2,715	1,139	24.7	744	45.3	16,529	115	75.6
1927	31,138	23,074	54,212	4.6	29,788	2,450	1,011	24.8	662	41.0	15,495	124	71.1
Lehigh Valley 1928	20,349	13,625	33,974	9.8	26,008	1,958	867	26.7	536	30.9	13,528	144	62.9
1927	21,592	10,865	32,457	10.3	26,560	1,924	834	26.4	523	31.1	12,623	143	57.4
Michigan Central 1928	14,797	20,131	34,928	5.6	30,711	2,020	741	20.6	415	32.0	7,955	103	85.1
1927	15,644	14,719	30,363	4.9	27,753	1,873	683	20.8	418	32.5	6,975	110	68.6
New York Central.....1928	56,021	77,309	133,330	6.7	30,865	2,424	1,033	26.4	551	33.4	11,368	105	63.6
1927	61,570	70,711	132,281	4.6	29,702	2,414	1,016	25.2	510	32.2	10,417	104	58.3
New York, Chi. & St. L..1928	11,508	12,236	23,744	6.4	26,900	1,948	763	21.5	674	46.1	9,610	104	76.7
1927	11,919	12,097	24,016	5.8	26,323	1,914	724	20.6	625	45.4	9,019	99	73.2
Pere Marquette 1928	8,353	11,638	19,991	4.3	19,468	1,571	680	25.0	564	34.6	5,173	103	80.0
1927	8,867	10,249	19,116	4.1	18,496	1,543	675	25.5	541	32.6	4,744	106	70.5
Pitts. & Lake Erie.....1928	10,343	9,437	19,780	11.2	34,282	3,237	1,862	47.3	398	13.3	34,064	93	68.2
1927	12,497	8,311	20,808	3.7	33,407	2,951	1,679	45.8	316	11.5	28,415	97	53.5
Wabash 1928	13,288	14,807	28,095	3.0	28,162	1,767	702	22.3	686	45.9	7,721	118	79.8
1927	14,658	11,797	26,455	2.7	28,640	1,793	713	22.0	658	44.2	6,968	107	71.5
Central Eastern Region:													
Baltimore & Ohio.....1928	66,430	37,871	104,301	5.8	22,612	2,061	983	31.8	670	33.7	12,627	146	73.6
1927	70,307	37,038	107,345	5.5	21,215	2,023	949	31.3	612	31.9	11,866	151	71.2
Central of New Jersey...1928	15,992	12,588	28,580	5.9	21,835	2,075	998	32.8	340	17.5	14,066	142	58.3
1927	17,828	11,614	29,442	6.1	19,679	1,977	935	31.4	286	15.7	12,169	150	53.4
Chicago & Eastern Ill....1928	11,916	4,374	16,290	38.7	25,156	1,703	777	27.9	428	23.7	7,380	125	54.9
1927	12,621	4,678	17,299	30.2	22,862	1,680	790	29.8	441	23.4	8,079	134	68.4
Clev., Cin., Chi. & St. L..1928	16,358	21,663	38,021	5.1	27,981	2,119	985	29.9	661	35.6	10,596	112	62.4
1927	17,582	21,922	39,504	4.9	26,911	2,112	977	30.3	626	33.8	10,413	116	63.0
Elgin, Joliet & Eastern..1928	8,368	7,756	16,124	5.2	16,044	2,157	1,141	39.0	335	13.2	11,721	123	56.3
1927	8,749	6,946	15,695	5.3	13,798	2,213	1,151	39.3	306	12.0	10,404	120	49.6
Long Island 1928	1,504	6,269	7,773	1.3	5,634	930	370	25.6	92	6.2	1,804	273	39.6
1927	1,726	6,517	8,243	1.6	4,968	926	369	25.1	77	5.2	1,607	275	38.7
Pennsylvania System 1928	198,570	92,792	291,362	6.2	26,163	2,361	1,107	30.7	546	27.4	14,797	121	58.0
1927	202,587	88,052	290,639	6.6	24,104	2,126	974	29.8	501	26.3	13,422	121	54.9
Reading 1928	21,961	15,611	37,572	5.1	21,365	2,017	1,043	34.7	591	26.4	19,692	140	64.8
1927	25,082	13,080	38,162	2.6	21,440	1,938	980	35.8	541	25.0	18,251	145	64.0
Pocahontas Region:													
Chesapeake & Ohio.....1928	26,399	13,601	40,000	2.6	34,636	2,852	1,534	43.4	1,502	61.4	22,029	88	69.9
1927	28,969	15,756	44,725	3.0	30,948	2,740	1,458	43.3	1,297	54.2	21,432	95	70.4
Norfolk & Western.....1928	26,134	10,502	36,636	1.5	42,639	3,195	1,710	43.9	1,392	53.5	22,848	123	64.1
1927	28,202	10,033	38,235	1.1	39,158	2,951	1,574	43.0	1,147	44.4	19,660	136	59.4
Southern Region:													
Atlantic Coast Line.....1928	20,602	8,569	29,171	5.9	18,791	1,425	536	20.3	374	29.2	2,131	105	42.4
1927	21,846	8,545	30,391	5.8	18,702	1,423	559	21.7	410	29.8	2,443	112	45.2
Central of Georgia.....1928	3,715	5,254	8,969	5.1	18,440	1,300	548	21.1	549	34.4	2,593	135	56.9
1927	4,140	5,790	9,930	2.9	18,839	1,391	583	21.8	532	34.1	2,786	133	57.7
Ill. Cent. (inc. Y.&M.V.)1928	37,434	26,710	64,144	4.9	23,778	1,821	786	27.5	815	46.3	7,787	128	80.1
1927	38,420	31,487	69,907	6.4	23,736	1,837	785	27.5	757	43.9	8,021	126	78.2
Louisville & Nashville...1928	39,514	17,668	57,182	10.9	19,710	1,561	763	33.7	728	35.9	8,228	133	83.7
1927	41,757	22,963	64,720	10.3	17,163	1,482	709	33.3	646	33.0	8,276	146	87.0
Seaboard Air Line.....1928	14,618	8,829	23,447	8.2	17,996	1,429	573	22.0	446	30.2	2,333	132	57.3
1927	14,460	8,246	22,706	7.4	17,824	1,482	604	22.6	447	30.0	2,369	138	61.2
Southern 1928	45,686	21,157	66,843	8.9	18,363	1,393	577	22.4	438	28.7	4,380	155	55.1
1927	43,085	21,683	64,768	5.6	18,170	1,402	570	22.0	432	29.3	4,169	155	53.5
Northwestern Region:													
Chi. & North Western..1928	41,755	34,353	78,108	6.0	21,555	1,616	644	23.5	442	29.9	4,081	121	64.3
1927	45,830	33,189	79,019	6.3	19,924	1,580	616	23.0	424	28.8	3,958	116	63.7
Chi., Mil., St. P. & Pac..1928	48,676	29,103	77,779	3.0	23,615	1,841	804	25.9	651	38.5	4,499	125	77.6
1927	52,667	30,133	82,800	5.2	22,837	1,820	794	25.4	589	35.2	4,356	126	73.6
Chi., St. P., Minn. & Om.1928	2,548	10,280	12,828	6.0	16,220	1,269	542	23.9	477	29.8	3,552	119	69.2
1927	2,640	10,407	13,047	8.9	16,067	1,283	550	23.3	473	28.9	3,582	119	66.8
Great Northern 1928	40,835	22,048	62,883	3.4	28,233	2,455	1,132	30.0	842	44.4	6,380	122	81.0
1927	42,060	20,004	62,064	3.6	27,339	2,449	1,111	29.2	758	41.7	5,766	116	68.3
Minn., St. P. & S. St. M..1928	19,614	8,860	28,474	3.3	19,248	1,686	792	26.7	571	31.9	3,723	98	83.5
1927	20,643	9,660	30,303	3.3	18,102	1,521	708	26.2	530	30.4	3,672	97	71.0
Northern Pacific 1928	35,610	13,488	49,098	6.0	25,095	2,014	897	25.9	629	35.6	4,770	139	67.9
1927	36,373	12,655	49,028	5.5	24,491	1,988	899	26.5	629	35.0	4,765	134	62.7
Ore.-Wash. R.R. & Nav..1928	7,407	5,390	12,797	5.0	23,707	1,838	815	26.6	522	29.1	2,973	162	62.9
1927	7,423	5,046	12,469	4.1	21,003	1,759	835	27.2	515	25.5	2,980	165	58.1
Central Western Region:													
Atch., Top. & S. Fe (incl. 1928	50,456	20,527	70,983	5.9	32,515	2,153	731	20.3	729	56.2	4,951	106	87.7
P. & S. F.).....1927	52,716	19,811	72,527	5.0	30,501	2,136	685	19.9	752	61.9	5,238	109	97.1
Chicago & Alton.....1928	8,555	5,163	13,718	4.7	21,577	1,501	577	22.7	488	33.1	6,695	136	85.9
1927	9,379	4,655	14,034	4.8	19,605	1,472	556	21.8	413	28.5	5,819	155	73.2
Chi., Burl. & Quincy....1928	40,606	28,825	69,431	4.6	25,160	1,929	872	26.6	714	42.5	5,319	122	68.4
1927	43,764	27,957	71,721	5.1	23,896	1,853	831	26.5	677	40.8	5,202	121	69.5
Chi., Rock I. & Pacific..1928	26,025	24,204	50,229	6.2	19,945	1,534	640	24.0	617	39.3	4,097	139	76.3
1927	30,050	23,258	53,308	5.8	19,709	1,545	645	23.5	547	35.0	3,849	131	71.1
Denver & R. G. Wn....1928	10,300	7,100	17,400	2.3	17,496	1,567	611	23.2	523	36.3	3,548	181	73.3
1927	10,281	6,215	16,496	2.4	15,763	1,514	598	22.9	494	34.2	3,186	194	64.7
Oregon Short Line.....1928	8,003	5,961	13,964	4.1	24,471	1,877	744	24.7	767	49.9	4,219	115	87.4
1927	8,572	5,377	13,949	4.1	22,716	1,746	695	23.8	708	45.1	3,890	121	78.6
So. Pacific—Pacific Lines.1928	38,011	28,680	66,691	6.3	23,736	1,905	702	22.0	680	47.0	5,193	119	85.3
1927	35,734	28,362	64,096	5.8	23,114	1,898	684	21.6	678	48.4	4,953	119	81.9
Union Pacific 1928	16,992	15,985	32,977	8.3	36,642	2,049	675	19.7	1,251	100.5	10,961	109	135.6
1927	19,234	13,792	33,026	7.7	38,653	2,145	713	19.5	1,285	101.7	11,436	106	129.8
Southwestern Region:													
Gulf, Colo. & S. Fe....1928	8,620	5,454	14,074	3.8	27,564	2,081	869	24.5	533	33.4	3,877	94	64.2
1927	8,790	5,314	14,104	3.9	27,731	2,009	854	26.6	614	37.5	4,480	94	65.3
Mo.-Kans.-Texas Lines...1928	14,855	9,404	24,259	6.7	26,468	2,014	793	23.0	552	39.3	4,214	91	71.9
1927	15,809	7,043	22,852	7.1	24,978	1,935	753	22.5	494	35.7	3,552	97	62.7
Missouri Pacific 1928	25,640	25,698	51,338	5.3	23,036	1,728	733	24.7	706	43.2	4,878	124	83.4
1927	26,111	22,799	48,910	5.0	22,471	1,700	719	25.3	704	43.4	4,699	125	78.0
St. Louis-San Francisco..1928	20,706	12,507	33,213	3.4	18,648	1,431	604	24.6	532	33.4	3,381	146	63.7
1927	20,190	8,768	28,958	3.9	19,210	1,517	633	25.0	589	37.5	3,464	148	61.0
Texas & New Orleans...1928	10,587	17,134	27,721	5.1	18,622	1,334	534	22.5	506	33.6	2,982	98	78.1
1927	11,472	16,404	27,876	4.7	18,089	1,338	532	23.7	489	32.9	2,992	105	82.7
Texas & Pacific.....1928	5,931	10,646	16,577	3.9	21,672	1,769	709	25.8	765	49.7	6,293	92	83.5
1927	5,974	7,966	13,940	5.8	21,281	1,739	698	23.3	585	37.9	4,046	101	60.5

News of the Week

(*Continued from page 1247*)

commission. Another provides that the holders of voting securities shall be held to have consented to a unification plan if a majority of the votes of stockholders are cast in favor of the plan unless, in the case of bondholders having a vote, the trustee shall file a certificate showing that the holders of a majority of the bonds dissent.

Railway Officers Testify on Stabilization of Employment

Stabilization of employment can be "more surely promoted by a state of mind reflecting a conscious desire to stabilize employment, than by any thing else," Daniel Willard, president of the Baltimore & Ohio and chairman of a special Committee on Stabilization of Railway Employment of the Association of Railway Executives, testified on December 17 at a hearing before the Senate committee on education and labor, which is investigating the unemployment situation. Mr. Willard outlined the progress made by the railroads in their efforts to reduce the seasonal fluctuations in railway employment, pointing out that the number of transportation employees must be adjusted to the volume of business but that much can be and has been done in regulating the distribution of maintenance work; and that keeping a more steady force has been a good thing for the railroads. He emphasized, however, that the railroads are, to some extent, hampered in their efforts by the fact that their earnings are restricted; and the commission has not yet allowed rates sufficient to produce a fair return. O. S. Jackson, superintendent of motive power and machinery of the Union Pacific, also testified before the committee regarding the conditions which make for irregularity in railroad employment.

J. T. Loree, vice-president and general manager of the Delaware & Hudson, described the progress made by that company under its policy of planning and distributing its work in such a way as to reduce seasonal fluctuations.

Conductor's Error Not Mitigated by Engineman's

A permanent printed order of the Unadilla Valley directed the conductor of train No. 2, a gasoline passenger car, on a single track leaving Bridgewater to meet train No. 15, a freight, in Bridgewater yard, where train No. 15 was to take a siding for No. 2. In disregard of the order, at Bridgewater the conductor of No. 2 directed his train to go on, and it ran into No. 15, and the conductor was killed. His administrator sued the company under the Federal Employer's Liability Act, on the ground that the collision was due in part to the negligence of other employees. It appeared that the conductor of No. 15 would generally telephone from River Forks, a Station about two miles from Bridgewater, to the station agent at Bridgewater that he was coming, and that he did so in this instance. The Bridgewater station agent testified that he told the motorman of No. 2, but the motorman denied it. At all events, the deceased did not receive the notice. It was argued that the failure to inform the conductor, and the motorman's act in obeying the conductor's order to start, if the jury found that he knew No. 15 was on the way, were negligence to which the injury was due at least in part. The New York Court of Appeals, (246 N. Y. 365,) reversing 218 App. Div. 5, and affirming the judgment of the Trial Term, held that all three employees were negligent, that the motorman's duty was to disregard the conductor's signal until he was certain the freight had taken the siding, and that the conductor's duty was merely secondary to the motorman's.

The Supreme Court of the United States has reversed this judgment, holding that the conductor or his representative could not be heard to say that his subordinate ought not to have done what he ordered, nor could he hold the company liable for a disaster that followed disobedience of a rule intended to prevent it, when the disobedience was brought about, and intended to be brought about, by his own acts. And it could not be said that the collision resulted in part from the failure to inform the conductor of the telephone message from No. 15. The message would only have given him another motive for obeying the rule that he was bound to obey. Unadilla Valley v. Caldine. Decided December 10, 1928. Opinion by W. Justice Holmes.

The Triangle Club

The latest addition to the resources of the railroad safety specialist comes before the public in the shape of amateur theatricals. The Nashville division of the Louisville & Nashville, J. R. Wheeler, superintendent, has during the past few months given a play, "The Triangle Club," in fifteen cities and towns along the line of the road, in Kentucky, Tennessee and Alabama, and has entertained packed houses in every instance. The general public is usually invited. Unlike the motion pictures that are employed to stimulate interest in the safety enterprise, this play is carried out entirely by railroad employees and their wives. The author of the play, George C. Howard, of Nashville, Tenn., chief clerk to Superintendent Wheeler, directs its production, and evidently is to be credited with the ability to select and inspire the necessary amateur talent. The president of the road, W. R. Cole, speaking at the close of the entertainment given in Louisville, Ky., on November 12, assured the cast that if they were as good at railroading as at acting they were all right. This show at Louisville was given under the auspices of the Louisville Safety Council.

Superintendent Wheeler regards the results of this enterprise, in spreading enthusiastic interest among all the employees in safe practice, as highly satisfactory; and among the varied measures for promoting good will—between railroad and public, between employer and employee, and employee with fellow employee—this is to be classed as possessing marked value.

The play deals with (1) safe practice, as for example, in switching cars and in using track cars on the main line; (2) safety at highway crossings and (3) first-aid; it also touches on solicitation of business. The principal characters represented are: A conductor, his wife and two children; a section foreman and wife, an engineman and wife; a car repairer and wife, and a first-aid worker. Little scenery is required as both scenes are in the conductor's home, where the other people have been invited to a card party. After the more immediate problem of safety has been suitably set forth, a farmer is injured at a highway crossing, near the house, and this gives opportunity for the first-aid specialist to step in. Solicitation of business is brought in by means of telephone messages interspersed with the card playing and other features. The presentation of the play requires about one hour and 15 minutes. Competent employees are said to volunteer readily to take the parts.

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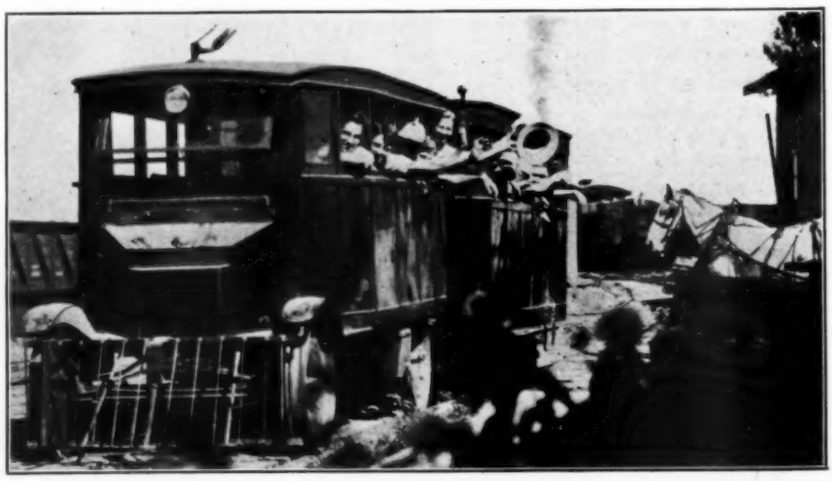


Henry Miller

A Motor Car on the Tabor & Northern

This 11-mile road which runs between Tabor and Malvern, Ia., is owned by E. V. Stopper, who acts as president, general manager, agent and engineer.

Traffic

The Public Utilities Commission of Colorado held a hearing on December 11 on the application of shippers for reduced rates on the Denver & Salt Lake between Denver, and Craig. The shippers held that through the use of the Moffat tunnel the difference has been reduced about 20 miles and trains are moved with less expense. The railroad contends that operating costs are the same because of increased investment.

Commission Asked to Suspend Compromise Lake Cargo Tariffs

Another effort to re-open the "lake cargo" coal rate controversy has been made by the Pittsburgh Operators' Lake Rate Committee, which has filed with the Interstate Commerce Commission a protest and petition asking it to suspend the tariffs filed by the railroads serving the northern and southern coal districts, effective on January 1, which would establish a compromise differential of 35 cents a ton in the northern rates under those from the southern district. The order by which the commission sought to establish a 45-cent differential is involved in litigation in the Supreme Court. The protestants also ask the commission to investigate "the understanding and agreement entered into by the carriers serving the northern and southern coal producing districts and the interests and motives which prompted and resulted in that understanding and agreement, and the lawfulness thereof."

Central Western Advisory Board

The Central Western Shippers' Advisory Board held its sixteenth regular meeting at Ogden, Utah, on December 12, with an attendance of over 200. Commodity committee reports indicate that general business conditions during the first quarter of 1929 will be approximately the same as last year. At a banquet in the evening, the principal speakers included Paul Clagstone, manager of the western division of the United States Chamber of Commerce and William Jeffers, vice-president of the Union Pacific. The next meeting will be held at Kearney, Neb., on June 29

Freight Traffic Red Book

This carefully prepared and comprehensive book has appeared for 1929; 864 pages, with large map, and including a half dozen or more new subjects. These new subjects, necessitating 100 additional pages as compared with the preceding volume, include International Joint Rates between the United States and Canada, car mileage; dunnage and bracing, Inland Waterways Corporation Act, and the Merchant Marine Act of 1928. Important additions and changes have been made in many sections of the book, and motor-truck service, freight classification and other subjects are brought up to date. This book is published by the Traffic Publishing Company, 150 Lafayette street, New York.

New Jersey Station Agencies Discontinued

The Public Utilities Commissioners of New Jersey, granting petitions of the Pennsylvania, has authorized the discontinuance of agencies at Alloway Junction, and at Quinton, effective January 1. The board has approved the discontinuance of Florence as a passenger agency, the freight business of this station to be hereafter attended to by the agent at Roebling, less than one mile distant. Petitions of the railroad company for discontinuance of the agencies are denied as regards Leesburg, Husted, Daretown and Pedricktown.

Acting on the application of the Normandy Beach Improvement Association, the board has approved the establishment of a station at Normandy Beach, to begin with the issuance of the spring timetable next year; and the station at Chadwick, nearby, is to be closed.

Allegheny Advisory Board

The Allegheny Regional Advisory Board met at Pittsburgh, Pa., on December 13, with a large attendance. Fifty new members were admitted and the total membership of the board is now 1,427. The summary of the estimates of expected freight traffic during the first three months of 1929, shows a probable increase of 14.1 per cent. Commodity committees report as follows: Coal and coke, 17 per cent increase; iron and steel, 5 per cent; gravel, sand and stone, 23 per cent; chemicals and explosives, 18 per cent; petroleum, etc., 5 per cent. Other expected increases are, potatoes, 10 per cent; machinery, castings, etc., 10 per cent; fertilizers, 18 per cent; paper, 8.6 per cent; aluminum, 10 per cent; glass, 16 per cent; rubber, 20 per cent; sanitary ware, 10 per cent.

Decreases are expected in the following: Grain, 5 per cent; paving brick, 2.5 per cent; rough, rolled and ribbed glass, 6.9 per cent; sewer pipe, 8.7 per cent.

This was the second annual meeting of the Board and officers were chosen for the ensuing year as follows: General Chairman, Royal E. Cook, Pittsburgh, Pa.; General Secretary, Ernest H. Gilbert, Morgantown, W. Va.; Secretary, Charles Brooks. The next meeting is to be held at the George Washington Hotel, Washington, Pa., Thursday, March 14.

Freight Traffic in October

The volume of freight traffic handled by the Class I railroads in October this year amounted to 48,205,507,000 net ton-miles, according to reports compiled by the Bureau of Railway Economics. This was an increase of 2,668,956,000 net ton-miles or 5.9 per cent, over the total for October, 1927, but a decrease of two-tenths of one per cent under that for the same month in 1926. In the Eastern district, there was an increase of 8.6 per cent as compared with the same month last year, while the Southern district reported a decrease of six-tenths of one per cent. The Western district reported an increase of 4.7 per cent.

For the first ten months in 1928, the volume of freight amounted to 397,368,913,000 net ton-miles. This was a decrease of 5,483,825,000 net ton-miles, or 1.4 per cent, below that of the corresponding period last year and a decrease of 1.9 per cent below that of the same period in 1926. Railroads in the Eastern district for the ten months reported a decrease of 4.3 per cent, while the Southern district reported a decrease of 7.4 per cent. The Western district reported an increase of 5.1 per cent.

The daily average movement per freight car in October was 36.2 miles, the highest average for any month on record and an increase of 1.5 miles above the best previous record for any month, which was attained in October last year. It also was an increase of 1.9 miles above that for October, 1926. The daily average for the first ten months in 1928 was also the highest ever attained for any corresponding period, amounting to 31.2 miles per day. This was an increase of five-tenths of a mile above the daily average for the same period last year and an increase of four-fifths of a mile above that for the first ten months in 1926.

The average load per car in October was 27 tons, including less-than-carload freight as well as carload freight. This was an increase of five-tenths of one ton over the average for October last year. For the first ten months in 1928, the average load per car was 26.6 tons, compared with 27.2 tons for the same period in 1927 or a decrease of six-tenths of one ton.

PRELIMINARY 1929 BUDGET PLANS for the Swiss State Railways call for an expenditure equivalent to $10,000,000 during the year for electrification, maintenance of way and construction, equipment maintenance and purchases and administrative expenses, according to recent reports made public by the United States Department of Commerce.

* * *

A Santa Fe Train at Chicago

Supply Trade

The Gasselli Chemical Company has purchased 20 acres of land at Ecorse, Mich., on which it plans to construct a plant.

C. E. Foust, vice-president and general sales manager of the Kentucky Fire Brick Company, Chicago, has been appointed representative of the **Birdsboro Steel Foundry & Machine Company,** Birdsboro, Pa., in the Chicago district, with office at 208 South LaSalle street.

T. C. Browne of the advertising service department of the *Railway Age,* will on January 1 become assistant to the president of the **J. S. Coffin Jr. Co.,** Englewood, N. J. Mr. Browne, in 1916, entered the employ of the Erie as a special apprentice. At the outbreak of the World War he obtained a leave of absence and enlisted in the Twenty-First Engineers, which operated light

T. C. Browne

railway units from railheads to the front lines. Upon his return from France he re-entered the service of the Erie and served consecutively as machinist, piece work checker, foreman, resident inspector and schedule engineer. In 1925 he resigned to go with the *Railway Age* in its advertising service department.

Alexander M. Hamilton has been appointed foreign sales manager of the **American Locomotive Sales Corporation,** in charge of foreign sales of the American Locomotive Company, with headquarters at New York. After graduating from Cornell in 1909, Mr. Hamilton served as special apprentice with the Erie. He was later employed in the engineering department of the Westinghouse Electric & Manufacturing Company, at East Pittsburgh, Pa., for about one year, after which he entered the employ of the American Locomotive Company at Schenectady, serving in the shops, estimating and engineering departments. In 1915 he went to Russia as technical representative of the American Locomotive Company returning via Siberia and the Pacific in 1918. He served for a few months in San Francisco as district sales manager on the

Underwood & Underwood

Alexander M. Hamilton

Pacific Coast, and then entered the U. S. Field Artillery. After the Armistice he returned to the American Locomotive Sales Corporation as European representative with headquarters in Paris, from which post he was transferred to New York in 1921 as assistant vice-president.

J. W. Fristoe, who has been elected chairman of the board of the **T. J. Moss Tie Company,** was born on November 13, 1858, at Salisbury, Mo., and entered business in 1879 with the Rennolds and Moss Company, which in 1893 became the T. J. Moss Tie Company. After

J. W. Fristoe

holding various positions with these companies he was elected president and general manager in 1902 which position he has held until his recent election. His retirement to less active participation precedes the fiftieth anniversary of the founding of the company which will be celebrated next year and is precipitated by a desire to devote more time to civic work in St. Louis. **E. E. Pershall,** who succeeds Mr. Fristoe, was born on August 17, 1887, at East St. Louis, Ill., and was educated as a chemical engineer at the University of Illi-

E. E. Pershall

nois. He entered business on July 16, 1910, with the Kettle River Treating Company and in February, 1918, became assistant to the president of the T. J. Moss Tie Company. In the following year he was promoted to vice-president, which position he has held until his recent election.

Obituary

Horace Reynolds Hobart, at one time editor of the *Railway Age* (one of the predecessors of the present *Railway Age*), died at his home in Chicago on December 16. A sketch of Mr. Hobart's life will appear in next week's *Railway Age.*

Trade Publications

FAIR ANTI-CREEPERS. — A four-page folder in two colors, with a distinctive tissue cover, has been issued by the P. & M. Company, Chicago. A reproduction of a painting of a mountain scene on the front page bears the caption, "It's Always Fair Weather in the Rockies," while the two inside pages show four attractive views of tracks on the Denver & Rio Grande Western that are equipped with Fair rail anchors.

* * *

On the Great Northern in North Dakota

Equipment and Supplies

Locomotives

THE GEORGIA NORTHERN is inquiring for one Pacific type locomotive.

THE NATIONAL RAILWAYS OF MEXICO are inquiring for three locomotive tenders.

THE ATCHISON, TOPEKA & SANTA FE has ordered four 4-8-4 type locomotives from the Baldwin Locomotive Works.

THE LOUISVILLE & NASHVILLE has ordered 24 Mikado type locomotives from the Baldwin Locomotive Works. Inquiry for this equipment was reported in the *Railway Age* of December 8.

THE GREAT NORTHERN has ordered six 4-8-4 type locomotives from the Baldwin Locomotive Works. Inquiry for this equipment was reported in the *Railway Age* of November 17.

Freight Cars

THE WABASH has ordered 35 single sheathed automobile cars of 40-tons capacity from the American Car and Foundry Company.

THE GREAT NORTHERN has ordered 200 general service cars of 50 tons' capacity from the Pressed Steel Car Company. Inquiry for this equipment was reported in the *Railway Age* of November 17.

THE PACIFIC FRUIT EXPRESS has ordered 600 steel underframes from the Pacific Car & Foundry Company. Inquiry for this equipment was reported in the *Railway Age* of November 17.

THE CHICAGO & EASTERN ILLINOIS has ordered 200 automobile cars from the Mt. Vernon Car & Manufacturing Company. This equipment was reported in the *Railway Age* of August 4.

THE BOSTON & MAINE has ordered 500 hopper cars from the Standard Steel Car Company. Inquiry for this equipment was reported in the *Railway Age* of November 24.

THE FRUIT GROWERS EXPRESS has ordered 196 underframes from the Ryan Car Company. Inquiry for this equipment was reported in the *Railway Age* of December 1.

THE WESTERN FRUIT EXPRESS is inquiring for 800 underframes for refrigerator cars. The cars will probably be built at the Great Northern shops at St. Paul.

Passenger Cars

THE GREAT NORTHERN is inquiring for 6 gas-electric rail motor cars, 75 ft. long, with 400 hp. units.

THE GREAT NORTHERN has ordered six dining cars from the Pullman Car & Manufacturing Company. Inquiry for three dining cars was reported in the *Railway Age* of November 17.

THE NORFOLK & WESTERN is inquiring for 10 baggage and express cars and five mail and baggage cars, specifications on the cars to be purchased as announced in the *Railway Age* of October 27, having been revised.

THE CHICAGO, ROCK ISLAND & PACIFIC is inquiring for eight gas-electric rail motor cars, 43 ft. long with duplicate 400 hp. power plants. These cars, which will be used for hauling equipment, are in addition to the six cars, 72 ft. long, as reported in the *Railway Age* of December 15.

Iron and Steel

THE LOUISVILLE & NASHVILLE has ordered 800 tons of structural steel for bridge work at Birmingham, Ala., from the Nashville Bridge Company.

THE MICHIGAN CENTRAL has ordered 400 tons of structural steel for bridge work in Indiana, from the McClintic-Marshall Company.

Machinery and Tools

THE MISSOURI PACIFIC has ordered an overhead electric crane from the Harnischfeger Corporation.

THE LACLEDE STEEL COMPANY, St. Louis, Mo., has ordered a Putnam 42-in. by 29-ft. bed, heavy duty, motor driven, geared head lathe from Manning, Maxwell & Moore, Inc.

THE NILES-BEMENT-POND COMPANY has received orders for railway equipment, machine tools, including a car wheel borer, a car wheel lathe, a journal turning and axle lathe, a steam hammer and a wheel press.

Signaling

THE ST. LOUIS-SAN FRANCISCO has ordered from the Union Switch & Signal Company material for a mechanical interlocking at Liberal, Mo.; 24 working levers.

THE CANADIAN BRIDGE COMPANY, Ltd., has ordered from the Union Switch & Signal Company, a mechanical interlocking, 16 levers to be installed on the Canadian National bridge over Welland canal, at Thorold, Ontario.

THE PACIFIC ELECTRIC has ordered from the Union Switch & Signal Company material for automatic block signaling to be installed between Indian Village, Cal., and Newton Park; 34 color light signals with impedance bonds, relays, transformers, etc.

Construction

GREAT NORTHERN.—Plans are being prepared for the construction in 1929 of second main track between Williston, N. D., and Snowden, Mont., 26 miles, at a total cost of about $1,100,000. It is also planned to replace the wooden coaling station and water tank at Williston with steel structures and make other terminal and yard improvements at that point, at an estimated expenditure of more than $100,000. Authorization has been given for the construction of a six-stall addition to the roundhouse and construction of a new coaling station at Whitefish, Mont., at a cost of about $100,000.

LOS ANGELES & SALT LAKE.—This company plans the construction of a combined railway and motor coach passenger station at Atlantic boulevard and Telegraph road, East Los Angeles, Cal., about 6 miles from the Central Station, Los Angeles. It is expected that a contract for this work will be awarded before January 1. The architecture of the station will be of the Spanish type, both exterior and interior, and will involve an expenditure of about $100,000. It is designed to serve as a through station for an outlying territory east of Los Angeles, including the cities of Pasadena, Glendale, Long Beach, East San Pedro and Anaheim, which will be served by the new motor coach routes. A contract has been awarded to the Cherdron Construction Company for the construction of a six-stall 105-ft. brick and frame roundhouse addition at Los Angeles, the dismantling of 17 stalls, 85-ft. long, and the construction of a brick roundhouse foreman's office, with dimensions of 26 ft. by 27 ft., a brick lavatory and locker building addition to the round house, with dimensions of 26 ft. by 30 ft., together with heating system, extension of boiler washout system and sewer and pipe lines. The total expenditure for this work is estimated at $83,000.

LOUISVILLE & NASHVILLE-SOUTHERN.—A contract for the construction of the Twenty-second street viaduct over the tracks of these two roads in Birmingham, Ala., has been awarded to Millsap & Parker, Birmingham, Ala. Work on the viaduct will begin on Dec. 27 and the bridge will be ready for use Sept 1, 1929. It will cost approximately $180,000. A second contract has been let to the C. G. Kershaw Contracting Company, Birmingham, Ala., for extension of culverts under the tracks of the Louisville & Nashville in Birmingham. The cost of the new viaduct is to be paid by the City of Birmingham, the Birmingham Electric Company and the railroads, each paying one-third. The viaduct is the first project in the grade separation plans which will remove grade crossings in the center of the business district of Birmingham at an estimated cost of $4,000,000.

MISSOURI PACIFIC.—A contract has been let to Fairbanks, Morse & Co., Chicago, for the construction of a reinforced concrete direct coaling station with a 50 tons receiving hopper at Arkansas City, Kan.

MISSOURI SOUTHERN.—This company has applied to the Interstate Commerce Commission for authority for an extension from a connection with its present line in Reynolds county, Mo., to a point on the north bank of Current river, in Shannon county, 18 miles, to reach a tract of timber land.

PITTSBURGH, LISBON & WESTERN.—The Interstate Commerce Commission on December 18 made public its report withholding approval of the application of this company for authority to construct two branches from its present line, one extending northward to Youngstown, Ohio, and the other southward to Smith's Ferry, Pa., on the Ohio river, the two branches, together with a short section of the existing line, forming a north and south line from the Ohio river to the Youngstown district to establish a through route for the transportation of bituminous coal from the Pittsburgh and Connellsville districts. Authority to construct the proposed new line will not be granted, the commission said, until it is fully satisfied that a use of the existing rail routes between the Ohio river and the Youngstown district which will produce substantially the results proposed by the applicant is impracticable. The record will be held open and the proceedings assigned for further hearing and the Pittsburgh & Lake Erie and the Pennsylvania will be expected to make their position in regard to the proposed use of their lines entirely clear. The report also said the control of the proposed line by the Pittsburgh Coal Company, its principal shipper, would be a condition to be avoided, and that it was also proposed that the transfer facilities at the Ohio river shall be under the control either of the applicants or of the Youngstown Sheet & Tube Company, and that if it should be found necessary to grant a certificate for the construction of the line, consideration would be given to the imposition of a condition that the Lisbon shall not be under the control, direct or indirect, of the Pittsburgh Coal Company or any other industry or industries, and the further condition that terminal facilities shall be provided on the Ohio river which shall not be under such control. The evidence shows, the report says, that it is practicable and desirable that the Youngstown district shall have access to the Ohio river by rail or lines that will afford substantially the transportation advantages including rates, proposed by the applicants in this case.

ESTABLISHMENT OF A RESEARCH DEPARTMENT for the development of methods and equipment to effect improvements in service has been announced by the Boston & Maine. The department will be in charge of Charles J. McKiernan as manager. Mr. McKiernan has been engaged in investigations of special operating problems for the Boston & Maine.

Financial

ALTON & SOUTHERN.—*Stock.*—The Interstate Commerce Commission has authorized this company to issue $1,000,000 of capital stock to be sold at not less than par, the proceeds to be used for capital purposes. While there is no contract for the sale of the stock, it is expected that the Aluminum Company of America, holder of all except director's shares of outstanding stock, will purchase it.

ATCHISON, TOPEKA & SANTA FE.—*Bonds.*—The Interstate Commerce Commission has authorized an issue of $30,804,00 of 20-year 4½ per cent convertible debenture bonds, to be sold at not less than par and interest and the proceeds to be used to reimburse the treasury in part for capital expenditures not heretofore capitalized. It has also authorized the company to issue $18,122,400 of common stock to be issued solely to effect the conversion of such of the bonds as may be presented for that purpose.

BRIMSTONE.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for a certificate authorizing the abandonment of its railroad lines in Louisiana, from Sulphur Mines to Brimstone Junction, 0.75 mile, and from Sulphur Mines to Mossville, 6.64 miles.

CHICAGO JUNCTION.—*Lease by Chicago River & Indiana.*—In 1922 when the Interstate Commerce Commission authorized the lease of the former road by the latter, permitting an annual rental of $2,000,000, it stipulated a condition that its approval should not be taken to establish the fair value of any of the properties involved nor should it be interpreted to indicate that the Commission found the rental just and reasonable. The Commission has now modified this stipulation, retaining the reference to valuation, but striking out that referring to "just and reasonable" rental.

CHICAGO, ROCK ISLAND & PACIFIC.—*Bonds.*—This company has applied to the Interstate Commerce Commission for authority to issue $1,000,000 of general mortgage 4 per cent bonds, to reimburse the treasury, and $1,000,000 of first and refunding mortgage 4 per cent bonds. The general mortgage bonds are to be deposited with the trustee of the first and refunding mortgage.

EAST KENTUCKY SOUTHERN.—*Acquisition.*—This company has applied to the Interstate Commerce Commission for a certificate authorizing it to acquire the line now operated by the receiver of the Eastern Kentucky, between Grayson and Webbville, Ky., 13.4 miles.

MIDLAND VALLEY.—*Acquisition.*—This company has applied to the Interstate Commerce Commission for a certificate authorizing the acquisition and operation of the line of the Wichita & Midland Valley, from Arkansas City to Wichita, Kan., 50 miles, by purchase for $1,650,742. The company owns all the stock and bonds of the Kansas company and has been operating the line under lease.

NORTHWESTERN PACIFIC.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for a certificate authorizing the abandonment of its narrow-gauge line from Point Reyes to Monte Rio, Calif., 36.48 miles, and 3.19 miles of spur track and sidings, on the ground that the expenses of operation exceed the revenues and that the line is not necessary to the public convenience and necessity.

PENNSYLVANIA.—*Trackage Rights.*—This company and the Long Island have applied to the Interstate Commerce Commission for authority for the Long Island to operate under trackage rights over a portion of the Pennsylvania Tunnel & Terminal Railroad between Sunnyside Yard, Long Island, and the Pennsylvania station in New York City.

YREKA.—*Bonds.*—The Interstate Commerce Commission has authorized this company to issue $120,000 of first-mortgage 6 per cent bonds, the bonds to be sold to Russ-McKeehan & DeVaux, San Francisco, at 90, making the cost to the company 7.49 per cent.

Average Prices of Stocks and of Bonds

	Dec. 18	Last week	Last year
Average price of 20 representative railway stocks.	125.49	125.51	121.31
Average price of 20 representative railway bonds..	93.20	93.22	97.10

Dividends Declared

Albany & Susquehanna.—4½ per cent, payable January 1 to holders of record December 15a.

Allegheny & Western.—3 per cent, payable January 2 to holders of record December 20a.

Baltimore & Ohio.—Common, 1½ per cent, quarterly, Preferred, 1 per cent, both payable March 1 to holders of record January 12a.

Chicago, Indianapolis & Louisville.—Common, 2½ per cent, semi-annually; Common, extra, 1 per cent; Preferred, 2 per cent, semi-annually, all payable January 10 to holders of record December 26.

Delaware, Lackawanna & Western.—In the issue of December 8 it was incorrectly reported that this company had declared a $2.50 quarterly dividend, payable December 15 to holders of record December 1. The reference referred to the Delaware, Lackawanna & Western Coal Company.

Great Northern.—Preferred, $2.50, semi-annually, payable February 1 to holders of record December 28.

Mobile & Ohio.—3½ per cent, semi-annually; Extra, 5 per cent, both payable December 31 to holders of record December 24.

New Orleans & Northeastern.—Extra, 3 per cent, payable December 22 to holders of record December 15.

New York Central.—2 per cent, quarterly, payable February 1 to holders of record January 23.

Southern.—Common, 2 per cent, quarterly, payable February 1 to holders of record January 2; Preferred, 1¾ per cent, quarterly, payable January 15 to holders of record December 26.

THE PENNSYLVANIA has again shortened the northbound schedule of its "Southland" from St. Petersburg, Fla., and Tampa to Chicago. On December 2, the schedule was shortened 2 hr. and 45 min., the new departure time then being 3:30 p.m. from St. Petersburg, and 4:35 p.m. from Tampa and the arrival time at Chicago being 7:35 a.m. Under the schedule of December 18, the leaving time from St. Petersburg is set back to 5 p.m. and the leaving time from Tampa to 6 p.m. while the arrival time at Chicago is 7:35 a.m.

Officers

Executive

G. H. Gilmer, general manager of the Interstate Railroad Company, with headquarters at Andover, Va., has been elected president, with headquarters at the same point, succeeding **H. L. Miller,** resigned.

E. Thomason, vice-president and general manager of the Durham & Southern, has been elected president of the company succeeding **B. N. Duke,** who has resigned on account of ill health. Mr. Thomason will also retain the position of general manager. **Jones Fuller,** assistant secretary, has been appointed vice-president, succeeding Mr. Thomason. **F. L. Fuller, Jr.,** will succeed Jones Fuller as assistant secretary-treasurer. **F. E. Lagerholm,** assistant to the vice-president, has been appointed assistant to the president. The position of assistant to the vice-president has been abolished.

Bruce Scott, who has been elected vice-president in charge of the law departments of the Chicago, Burlington & Quincy and the Colorado & Southern, with headquarters at Chicago, has been in the service of the Burlington for 20 years. He was born on March 18, 1874, at Kaneville, Ill., and graduated from the University of Pennsylvania in 1895. Later he took postgraduate work at the University of Chicago, the

Bruce Scott

University of Wisconsin and the University of Berlin during 1905, 1906 and 1907. Mr. Scott was admitted to the Illinois bar in 1897 and practiced law at Aurora, Ill., from 1897 to 1905. From 1900 to 1905 he was also local attorney for the Burlington at Aurora. In 1906 he became a member of the political science and law faculties of the University of Wisconsin at Madison, Wis., then returning to railway service as general attorney of the Burlington at Chicago in 1911. From 1917 to 1924 Mr. Scott served as general solicitor, except during the period of the World War, from January 1, 1918, to March 1, 1920, when he acted as general solicitor for the United States Railroad Administration. In 1924 he was promoted to general counsel of the C. B. & Q., and the C. & S. and was elected a director of both companies. His election to vice-president of the two railroads became effective on December 10 and not on January 1 as reported in the *Railway Age* of December 15, page 1210.

Frank Mulks, assistant to the executive vice-president of the Southern Pacific, has been promoted to assistant to the president, with headquarters as before at San Francisco, Cal., effective January 1. Mr. Mulks was born on September 10, 1887, at Chesterhill, Ohio, and entered railway service in July, 1905, in the construction department of the Oregon-Washington Railroad & Navigation Company in eastern Oregon. The following year he became con-

Frank Mulks

nected with the treasury department of the Pacific Electric at Los Angeles, Cal. From January 1, 1906, until September 1, 1918, he occupied various positions in the treasury, accounting and executive departments and was then transferred to the executive department of the Southern Pacific at San Francisco. On January 1, 1920, Mr. Mulks was advanced to office manager in the executive department, where he remained until June, 1925, when he was promoted to assistant to the excutive vice-president.

A. D. McDonald, vice-chairman of the executive committee of the Southern Pacific and president of the Texas & New Orleans (the Southern Pacific lines in Texas and Louisiana), will, in addition to the other duties of those positions on January 1 assume general control of the management of the Southern Pacific Steamship Lines. Under the direction of the chairman of the executive committee he will have charge of the management, operation and traffic of the steamship lines, maintaining headquarters at both New York and Houston, Tex. **Lewis J. Spence,** executive officer of the Southern Pacific, with headquarters at New York, after more than 43 years of continuous service with that company, will retire at his own request from active service on December 31. Mr. Spence entered railway service on the Southern Pacific as a stenographer, serving in that capacity and as secretary and chief clerk to the assistant general traffic manager until January 1, 1896, when he was advanced to eastern

Lewis J. Spence

freight agent. On March 1, 1902, he was appointed general eastern freight agent at New York, also becoming general freight agent of the Atlantic Steamship Lines of the Southern Pacific in 1906. Mr. Spence was promoted to assistant director of traffic of the Southern Pacific with headquarters at Chicago, on January 1, 1911, then being further promoted to director of traffic of that company and the Union Pacific, with headquarters at New York, in the following year. On February 1, 1913, when the S. P.-U. P. merger was dissolved, he was appointed director of traffic of the Southern Pacific, with headquarters at New York. Mr. Spence was appointed executive officer of the S. P. in April, 1925. Upon his retirement, the office of executive officer will be discontinued and Mr. McDonald will take over his duties as manager of the steamship lines.

Joseph H. Dyer, general manager of the Pacific lines of the Southern Pacific, has been elected vice-president in charge of operation, with headquarters as before at San Francisco, Cal., effective January 1. He will have charge of the maintenance and operation of the Southern Pacific lines west of El Paso, Tex., and Ogden, Utah. Mr. Dyer was born at Colfax, Cal., on March 13, 1872, and entered railway service at the age of 16 years as a section laborer on the Southern Pacific, later being advanced to section foreman. In November, 1889, he became a freight brakeman, serving for the following nine years in that capacity, as freight conductor, as traveling conductor, as general yardmaster at Sacramento, Cal., and as trainmaster.

He was promoted to superintendent of the Shasta division, with headquarters at Dunsmuir, Cal., on October 1, 1908, and he was transferred to the Tucson division, with headquarters at Tucson, Ariz., in February, 1911, and to the

Joseph H. Dyer

Sacramento division, with headquarters at Sacramento, Cal., in July, 1914. In July, 1916, Mr. Dyer was promoted to assistant general manager, being further promoted to general manager, his present position, on September 1, 1918.

Financial, Legal and Accounting

Ira H. Lewis has retired as cashier of the Denver & Rio Grande Western, with headquarters at Denver, Colo., after 47 years of railroad service, 45 of which were with the Rio Grande Western.

Howard F. Glazier, chief clerk of the Treasury department of the Reading, and **Robert M. Robinson,** voucher clerk, have been appointed assistant treasurers of that company, succeeding **John S. Sneyd,** deceased.

The headquarters of **Thomas O. Edwards,** general auditor in charge of operating accounting of the Southern Pacific, will, on January 1, be transferred from San Francisco, Cal., to New York. The title of **Clarence M. Scott,** assistant treasurer, with headquarters at San Francisco, has been changed to local treasurer, effective on the same date. The title of **Robert Adams,** assistant general auditor, with headquarters at San Francisco, has been changed to associate auditor, also effective January 1.

George J. Mayer, assistant general auditor of the Northern Pacific, with headquarters at St. Paul, Minn., has retired from active railway service, effective January 1, after spending 39 years in the accounting department of that railroad. Mr. Mayer was born on December 5, 1863 at Holzheim, Wuerttenberg, Germany, and came to the United States in 1884. His first work in this country was in the office of the city treasurer of St. Paul and later he engaged in private business. Mr. Mayer entered the service of the Northern Pacific on January 2, 1890, as a clerk in the office of the auditor of disbursements. After serving in various clerical positions in the accounting department he was promoted to auditor of disbursements, with headquarters at St. Paul, in 1905. He was promoted to assistant general auditor in 1920.

Operating

J. A. Tobin, assistant superintendent of the Laurentian division of the Canadian Pacific, has been appointed assistant superintendent of the Smiths Falls division, succeeding **F. A. Winterson,** who has been granted a leave of absence. **A. R. MacLeod** has been promoted to assistant superintendent of the Laurentian division, succeeding Mr. Tobin.

Frank L. Burckhalter, first assistant general manager of the Southern Pacific, has been promoted to general manager of the Pacific lines of that company, with headquarters at San Francisco, Cal., effective January 1. Mr. Burckhalter succeeds **Joseph H. Dyer,** who has been elected vice-president in charge of operation and maintenance, and the office of first assistant general manager has been discontinued. Mr. Burckhalter was born at Truckee, Cal., in 1879, and after graduating from the Univer-

Frank L. Burckhalter

sity of California in 1900 he entered railway service as a rodman in the engineering department of the Southern Pacific. Later he served until February, 1902, as a levelman and a computor on location survey parties and he was then advanced successively to assistant engineer, section foreman and roadmaster. From March, 1906, to November, 1911, he served as division engineer at Bakersfield, Cal., and at Los Angeles, then being advanced to district engineer at Portland, Ore. Mr. Burckhalter was transferred to the operating department with his promotion to superintendent of the Portland division, with headquarters at Portland, Ore., on March 1, 1914, being further promoted to assistant general manager, with headquarters at San Francisco, on September 1, 1918. He was promoted to first assistant general manager on June 1, 1925.

Traffic

T. E. McAndrews, city freight agent for the Erie at New York, has been promoted to assistant general freight agent in charge of solicitation in the Chicago district, with headquarters at Chicago.

A. L. Doggett, who has been appointed general freight agent of the Baltimore & Ohio, with headquarters at Pittsburgh, Pa., was born on June 17, 1883, at Paris, Tex. He was educated in the public and high schools of Cincinnati, O., and entered the service of the Baltimore & Ohio as messenger on August 27, 1898. He served in that capacity until May, 1901, later serving

A. L. Doggett

successively as claim record clerk, rate clerk and claim clerk. He was promoted to traveling freight agent in February, 1907, and was advanced to the position of commercial freight agent, with headquarters at Akron, O., in June, 1917. Mr. Doggett was appointed division freight agent at Youngstown in 1919 and two years later was promoted to assistant general freight agent, in which position he served until his recent appointment as general freight agent.

J. H. Carroll, Jr., who has been appointed freight traffic manager of the Baltimore & Ohio, with headquarters at Pittsburgh, Pa., was born in Unionville, Mo., on January 1, 1891. He was educated at Smith Academy, St. Louis, and Princeton and Harvard Universities and entered railway service on September 1, 1915, in the general offices of the Great Northern at St. Paul.

The following year he was appointed traveling freight agent for the same road. He was advanced to commercial freight agent at Seattle a few months later and in September, 1916, was again promoted to the position of general agent at Cincinnati. From June 1, 1917, to June 1, 1919, he was captain in the United States Army railroad construction forces, returning to the service of the Great Northern in September of the latter year as general agent

J. H. Carroll, Jr.

at St. Paul. Mr. Carroll entered the employ of the Baltimore & Ohio railroad in March, 1920, as assistant freight agent. He was promoted to general freight agent in June, 1922, later being transferred in the same capacity to Pittsburgh, which position he held at the time of his recent appointment.

J. G. Hill, who has been promoted to general freight agent of the Erie, with headquarters at Chicago, was born at Pleasant Plain, Ohio, on April 8, 1877. He entered railway service at the age of 15 as a telegraph operator on the Cin-

J. G. Hill

cinnati, Hamilton & Dayton at Carthage, Ohio, later serving as telegraph operator and clerk in the accounting and legal departments of the Baltimore & Ohio Southwestern (both now parts of the Baltimore & Ohio. During 1896 Mr. Hill was a reporter on the Cincinnati (Ohio) Commercial Tribune, then becoming correspondence clerk in the general freight office of the B. & O. at Cincinnati early in 1897. After serving on nearly every clerical desk in the general freight office, including that of assistant chief clerk, he became western sales agent of the Lehigh Portland Cement Company in January, 1902. From 1905 to 1918 he advanced successively on the Queen & Crescent through the position of traveling freight agent in Ohio, Indiana and Michigan to commercial agent at Indianapolis, Ind., at Pittsburgh, and at Chicago. When the Queen & Crescent was consolidated with the Southern he became commercial agent for the Southern at Chicago. During the World War he was in charge of troop train movements and later of terminals at Chattanooga, Tenn. On March 20, 1920, Mr. Hill was appointed general agent of the Erie at Chicago, being transferred to St. Louis in 1921 and advanced to assistant general freight agent at Chicago in 1923. His promotion to general freight agent became effective on December 1.

Albert E. Brainard, who has been appointed general passenger agent, Line East of Buffalo, of the New York Central, with headquarters at New York, was born on October 2, 1866, in New York City. He entered the service of the New York Central in December, 1887, as stenographer, remaining in that capacity until June, 1889, when he was appointed traveling passenger agent. In

Albert E. Brainard

June, 1898, he was promoted to the position of district passenger agent and in January, 1900, he was appointed general agent in the passenger department, remaining in that position until February, 1907, at which time he was appointed general agent at Williamsport, Pa. Later he was transferred to New York as general traveling passenger agent and in March, 1924, he was promoted to the position of assistant general passenger agent, in which capacity he served until his recent appointment as general passenger agent.

Engineering, Maintenance of Way and Signaling

William H. Petersen, engineer of maintenance of way of the first district of the Chicago, Rock Island & Pacific with headquarters at Des Moines, Iowa, has been promoted to chief engineer of that railroad, and the Chicago, Rock Island & Gulf, with headquarters at Chicago, succeeding **Charles A. Morse,** retired. Mr. Petersen's promotion becomes effective January 1.

The titles of the principal engineering officers of the Union Pacific System, who were designated as assistant chief engineers, have been changed to chief engineers. The officers who are now in charge of the engineering departments of the various units of the Union Pacific System and their new titles are as follows: **G. J. Adamson,** chief engineer, Union Pacific, Omaha, Neb.; **B. H. Prater,** chief engineer, Oregon Short Line, Salt Lake City, Utah; **Samuel Murray,** chief engineer, Oregon-Washington Railroad & Navigation Company, Portland, Ore.; **R. L. Adamson,** chief engineer, Los Angeles & Salt Lake, Los Angeles, Cal.

R. J. Bond, division engineer of the Atlantic division of the Pennsylvania, has been appointed assistant to the engineer maintenance of way of the Southern division. **S. R. Hursh,** supervisor at North Philadelphia, Pa., has been appointed division engineer of the Atlantic division. **W. W. Portser,** division engineer of the Tyrone division, has been transferred to the Baltimore division in the same capacity. **J. F. Swenson,** supervisor of the Philadelphia division, has been appointed division engineer of the Tyrone division. **J. G. Hopkins,** division engineer of the Baltimore division, has been appointed assistant engineer, valuation department. **J. C. White,** division engineer of the Logansport division, has been transferred in the same capacity to the New York division. **W. D. Supplee,** super visor of the New York division, has been appointed division engineer of the Logansport division. **C. E. Adams,** division engineer of the St. Louis division, has been transferred in the same capacity to the Philadelphia terminal division.

Charles A. Morse, chief engineer of the Chicago, Rock Island & Pacific, the Chicago, Rock Island & Gulf and the Peoria Terminal, with headquarters at Chicago, Ill., will retire from active railway service on December 31. On that date Mr. Morse will have been in railway service for 48 years, of which 15 years were spent with the Rock Island and 27 years with the Atchison, Topeka & Santa Fe. He was born on January 1, 1859, at Bangor Me., and graduated in civil engineering from the University of Maine in 1879. In the following year he entered railway service as a chairman on the Chicago, Burlington & Quincy, advancing during 1880 and 1881 to instrumentman and to office man. In November of the latter

year he was appointed a division engineer on the Mexican Central (now the National of Mexico) and in 1884 he returned to the Burlington. After a year and a half with the latter road Mr. Morse entered the service of the

Charles A. Morse

Santa Fe in January, 1886, as a transitman, then advancing successively to division engineer at Fort Madison, Iowa, and to resident engineer at Pueblo, Colo., until July, 1901, when he was promoted to assistant to the chief engineer at Topeka, Kan. From February, 1902, to November, 1909, he was successively principal assistant engineer at La Junta, Colo., engineer of the Eastern Grand division at Topeka, acting chief engineer of the system at Topeka, assistant chief engineer at Topeka, acting chief engineer of the Coast lines at Los Angeles, Cal., and chief engineer of the lines east of Albuquerque, N. M., with headquarters at Topeka. Mr. Morse was then promoted to chief engineer of the Santa Fe system, with headquarters at Topeka, where he remained until April, 1913, when he was appointed chief engineer of the Rock Island. During federal control of the railroads, from September, 1918, to June, 1919, he acted as assistant director of operation, engineering and maintenance of way of the United States Railroad Administration, then returning to the Rock Island as chief engineer. Mr. Morse also served during federal control as a member of the Board of Review of the Construction division of the War department. He has long taken an active part in engineering society work, having served as president of the American Railway Engineering Association in 1918-1919, as president of the Western Society of Engineers in 1923-1924 and as president of the Chicago Engineers Club in 1918.

Mechanical

John F. Kane, assistant master mechanic of the Erie, with headquarters at Avoca, Pa., has been appointed master mechanic, in charge of the Jefferson and Wyoming divisions and the Binghamton and Elmira terminals, with headquarters at Susquehanna, Pa., succeeding **John Todd,** resigned. **Louis Metzger,** general inspector, with headquarters at Hornell, N. Y., has been appointed assistant master mechanic of the Wyoming division, with headquarters at Avoca, Pa., succeeding Mr. Kane.

Purchases and Stores

R. J. White, who has been promoted to purchasing agent on the Canadian Pacific, with headquarters at Calgary, Alta., has been in the service of that railroad for 20 years. He was born in February, 1891, and entered railway service at the age of 16 years as a storeman in the sleeping and dining car department of the Canadian Pacific at Glen Yards, Montreal, Que. Two years later he was advanced to assistant agent in the same department at St. John, N. B., and in 1911 he was further advanced to storekeeper at Toronto, Ont. Mr. White was promoted to commissary agent in the purchasing department at Toronto in 1915, where he remained until 1920 when he was transferred to Calgary. He held the latter position until his recent promotion to purchasing agent at Calgary.

Obituary

George R. Harleman, former division superintendent of the Lehigh Valley, died on December 16 at St. Luke's Hospital, Bethlehem, Pa. Mr. Harleman was 72 years of age and had been associated with railroad work for about half a century.

Jacob M. Dickinson, former secretary of war and at one time receiver of the Chicago, Rock Island & Pacific, died at St. Luke's hospital, Chicago, on December 13. Mr. Dickinson was born at Columbus, Miss., on January 30, 1851, and, after studying law at a number of universities in the United States, Austria and France, he practiced law at Nashville, Tenn., served on the Supreme Court of Tennessee, as local attorney for the Louisville & Nashville and as assistant attorney-general of the United States. He was general solicitor of the Illinois Central at Chicago from 1899 to 1901 and was then promoted to general counsel at the same point, a position he held until his appointment as secretary of war in 1909. Mr. Dickinson was receiver of the Rock Island from 1915 to 1917.

Ford .Harvey, president of Fred Harvey, Inc., the Harvey Hotel & Restaurant Company, the Harvey Company and the Santa Fe Transportation Company, died at Kansas City, Mo., on December 13 of pneumonia which followed an attack of influenza. He was born at Leavenworth, Kan., on March 7, 1866, and entered Racine (Wis.) College at the age of 13 years. Mr. Harvey left college in 1884, because of the seriousness illness of his father, Fred Harvey, to become connected with the chain of restaurants which his father organized on the Atchison, Topeka & Santa Fe. Ford Harvey was made head

Ford Harvey

of the organization in 1901 and in 1906 when the system was incorporated he was elected president of Fred Harvey, Inc. As subsidiary companies were formed to take over various additional hotel and restaurant operations he was elected president of them. Mr. Harvey had also been president of the Santa Fe Transportation Company, motor coach susbidiary of the Santa Fe, since its formation in 1926.

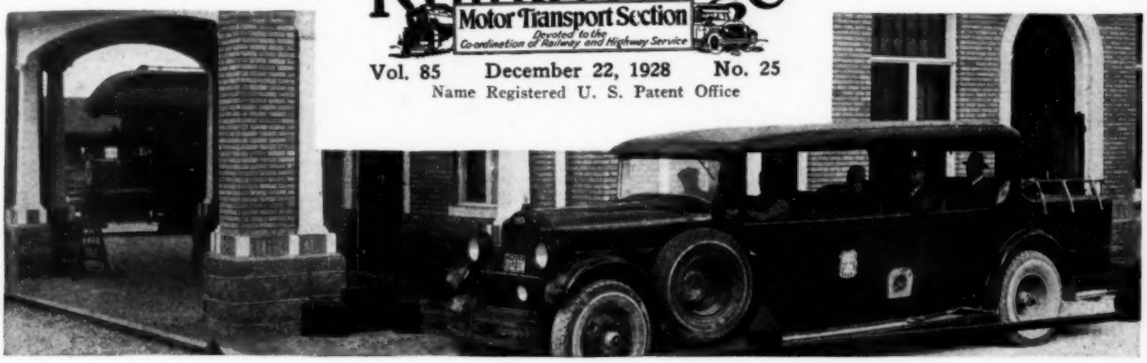
RUSSIAN RAILWAYS, during the fiscal year ended September 30, 1928, handled 11 per cent more freight than during the year 1926-27 while an increase of eight per cent in freight traffic over this 1927-28 total of 150,600,000 metric tons handled is anticipated for 1928-29, according to preliminary figures published in the November issue of the American-Russian Chamber of Commerce Bulletin.

These preliminary figures indicate gross revenues for the past year at an increase of 13.9 per cent over the revenues of the previous year. Car loadings during the year totaled 11,500,000 or a daily average of 31,000 cars loaded.

The Commissariat of Communications plans to expend an amount equivalent to $74,000,000 on new construction during 1928-29, in which connection an expenditure of $300,000 is to be made on labor saving construction devices to minimize the cost of the work. It is further planned, during the coming year, to acquire 515 new locomotives and make major repairs on 405 now in use. Orders for 15,800 new cars will be placed while repairs will also be made on 6,800 units of this equipment. Projected maintenance work includes renewals of ties, ballast and rails.

In connection with the publication of the foregoing data it was stated that Russian roads in general are handicapped by insufficient rolling stock to meet promptly demands being made for freight service. "All lines," it continues, "need more rolling stock as the supply now barely meets the regular needs without any reserves to call upon during the congested seasons. Also the regular traffic demands are increasing faster than rolling stock is being erected."

Railway Age
Motor Transport Section
Devoted to the Co-ordination of Railway and Highway Service
Vol. 85 December 22, 1928 No. 25
Name Registered U. S. Patent Office



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TACKLING the toughest jobs and delivering the longest uninterrupted mileage to operators everywhere is behind General's leadership in the commercial field. General's experience has been gained in supplying the big share of the truck and bus tire market. Knowing how to properly fit the tire to the job makes this factory experience available through the General dealer.

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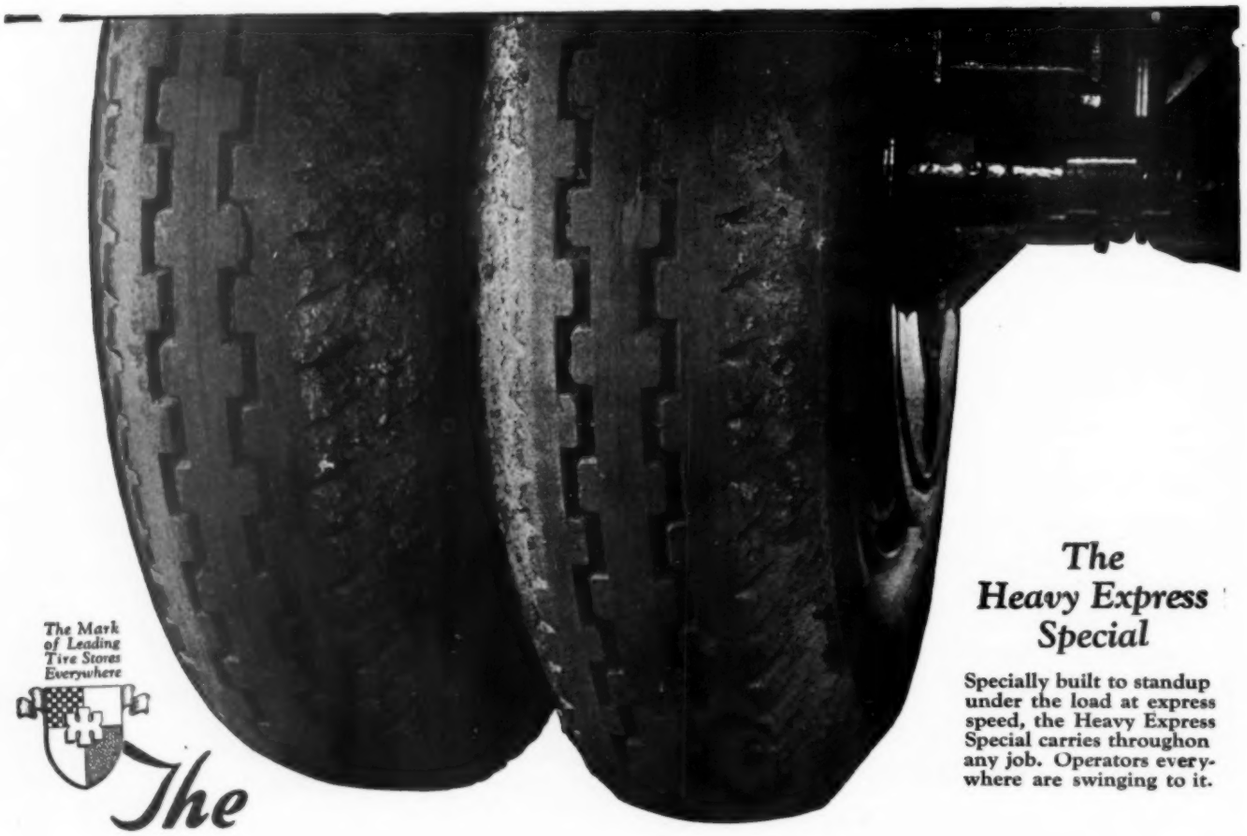

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Railway Age
Motor Transport Section
Devoted to the Co-ordination of Railway and Highway Service

Vol. 85, No. 25 December 22, 1928

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Long Distance Motor Coach Lines

ONE of the most interesting developments during 1928 in the field of motor coach transportation has been the establishment of the first transcontinental motor coach lines. It is now possible to ride in the motor coaches of one company from the east coast to the west coast. Originally looked upon as the unit of transportation useful only in connection with the handling of short-haul business, the motor coach has demonstrated that it can function in handling long-haul business as well. The outstanding transcontinental motor coach system at the present time is the Yelloway-Pioneer Transportation System. This system has 9,000 miles of motor coach lines in daily operation, extending all the way from New York to Los Angeles, Cal., and Portland, Ore. The organization and operating methods of this company are described in this issue of the *Motor Transport Section* by W. E. Travis, president of the Yelloway-Pioneer system. It is interesting in this connection to note that long-haul transportation by motor coach is no longer the exclusive province of the independent motor coach operator. The Southern Pacific, through its subsidiary, the Southern Pacific Motor Transport Company, already has two long motor coach lines in operation, one between San Francisco, Cal., and Portland, and the other between Los Angeles, Cal., and El Paso, Texas.

Opening the Way to Motor Coach Substitutions

A RECENT decision of the California Railroad Commission is of vital interest to railways contemplating the operation of motor coaches in substitution for passenger train service. This decision involved the Southern Pacific, which had applied for authority to discontinue a number of passenger trains in the vicinity of Santa Cruz, Cal., and Monterey, and to substitute motor coach service. In this case the principal point at issue was the fact that the routes which the Southern Pacific proposed covering with its motor coaches were already served by independent motor coach lines holding certificates from the commission. As is well known, most, if not all, state commissions are disinclined to issue more than one certificate for any particular route. In this case, however, in spite of the fact that the routes were already covered, the commission awarded additional certificates to the Southern Pacific, ruling in effect that a railroad may substitute motor coach service for train service, providing the motor coaches make only the stops previously made by the trains replaced, without regard to the presence on the same highway of an operator holding a prior certificate. The Missouri Pacific, in its recent application to install a similar motor coach route between Kansas City, Mo., and Joplin, is contending with the same situation. The decision of the California commission should be of assistance to the Missouri Pacific in the working out of its plans, as well as to other railways having similar substitutions in mind.

Will Congress Act on Interstate Regulation?

REPORTS from several sources appear to indicate the possibility that Congress, during its present short session, may take favorable action upon the proposed legislation pending before it providing for the regulation of interstate motor coach lines. According to a statement of the Bus Division of the American Automobile Association, complete agreement has been reached by the various organizations representing the operators and manufacturers of motor coaches, with the result that a united front in favor of the passage of the regulatory legislation will be presented when the proposed bill is taken up by Congress for consideration. To the extent that it will stabilize an important part of the motor coach business, the early enactment of legislation providing for the regulation of interstate motor coach lines is desirable. Another effect, however, may be to make it as difficult for a railway desiring to do so to establish an interstate motor coach service of its own, as it is at the present time to establish intrastate motor coach service in replacement of train service over a route covered by a certificated independent line.

Second Class?

MANY experienced travelers have been bewildered to see so many persons forsake the railways for motor coaches for long-distance journeys. The comment one frequently hears goes something like this: "Why they ride them for hundreds of miles is more than I can understand. You'd have to pay me to ride more than thirty miles in one of the things." Now a writer in the Bulletin of the Swiss Federal Railways puts forward an explanation of the phenomenon. He blames the "unhappy tariff policy of the American railways which provide only one class of travel in the trains," with rates so high that "a substantial part of the population is forced to renounce this means of transportation." The space provided per passenger in a motor coach is but a small fraction of that provided on trains. For long distances, therefore, there cannot be the same comfort as is provided on the railways. Neither is there the same speed, and regularity of schedules is considerably more difficult to maintain. The motor coach, so this writer seems to infer, for long distance service, therefore, provides an analogy to

second class service. If this analogy is true and second class service should become as popular on this continent as it is in other parts of the world, then the agency providing only first class service (to carry out the analogy) would seem to be in for some rather difficult times. The similarity, however, of the two situations probably is not complete; yet it may be close enough to prove uncomfortable. Looking at the ocean shipping lines, we find some of them handling freight only. Others which carry passengers provide accommodations suited to almost every purse, and it seems likely that the larger proportion of the net profit on such lines comes from handling the multitude at a moderate margin of profit than the few at a larger margin. Probably no one knowing conditions on the American railways would seriously suggest that they provide second class service on their trains. That a demand for less luxurious and lower priced travel exists, however, cannot be denied in the view of the growth of the long-distance motor coach lines. If the railroads decide that the provision of this less-expensive service is advisable, therefore, the motor coach would appear to be the logical agency to use in providing it.

The Report on Trucking in New York

ELSEWHERE in this issue of the *Motor Transport Section* appears an extensive abstract and summary of Examiner Harry C. Ames' report to the Interstate Commerce Commission on motor trucking in New York. This report appears to be one of the most important contributions yet offered in the discussion of the application of the motor truck to railroad service. To be sure, it deals specifically with New York and not the general problem and, as is generally known, the situation of the railroads in New York is most peculiar, with only one of the lines offering all-rail freight service to Manhattan. In the first place the report recommends that the Commission seek authority from Congress to regulate the operation of motor trucks in connection with railroad terminal service. If such authority were granted by Congress it would of course affect all railroads and not merely those entering New York. In the second place, while plainly recognizing the advantages in motor truck extension of railroad terminals the examiner fully discusses the obstacles, legal and practical, against the provision of such service along the lines which it has followed. This discussion ought to be interesting and instructive to both the advocates and opponents of railroad collection and delivery of freight. Again, the assertion is made in the report that handling of freight from New Jersey terminals by motor truck instead of car float and lighter would effect a saving of about 50 per cent in cost of handling, provided the truck service were provided as a substitute for floating rather than—as has been the case in New York—as an additional facility. If this statement is correct, then it is a challenge to railroad co-operative genius to work for this substitution. Finally, the report outlines a plan of direct delivery of freight which, in the opinion of the examiner, would be legal and not subject to the criticisms which "constructive station" service has aroused; studies in which I. C. C. employees would co-operate to determine costs of trucking in terminal service are urged. We understand that several of the parties to this proceeding object to some of the report's recommendations. This is as it should be. The report is not final, but it does serve as an excellent basis for discussion.

The Motor Truck as a Unit in Railway Operation

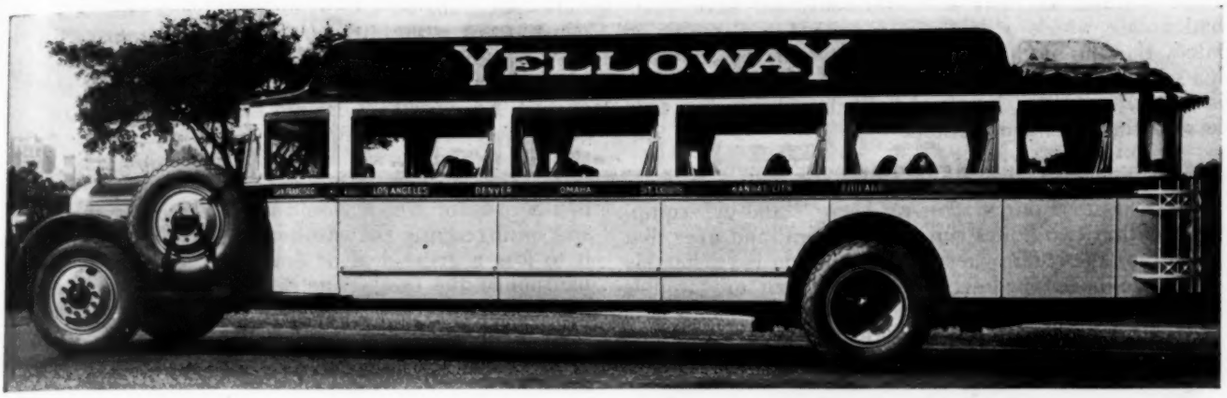
THE facts brought out at the Detroit meeting of the Motor Transport Division regarding motor truck competition and the results being secured by railways operating motor trucks, tractors and trailers in connection with their railway service, are so important from the standpoint of economical and profitable railway operation as to justify the greatest possible emphasis. That the railways are vitally interested in the effect that the motor truck is having and is to have on the transportation business was indicated at Detroit by the animated character of the discussion during the time that the Motor Truck Section of the division was holding the floor. What the members of the division had to say as to the experience of their railways with the motor truck as a competitior and as an adjunct, deserves general consideration.

It was agreed that competitive motor trucks are taking business from the railways, and this applies to all parts of the country. One railway officer stated that in the Pacific Northwest over half of the l.c.l. freight traffic moving for distances up to 100 miles has been lost by the railways to competitive motor trucks. This loss was attributed largely to the fact that the trucks give store-door collection and delivery service. Whether or not the railways should provide store-door collection and delivery for freight shipments has long been a controversial point, and the discussion at the Detroit meeting indicated that there is still no agreement on it. It is interesting to note, however, that there is already appearing a slight tendency toward the provision of store-door service by railways, as, for example, that of the Boston & Maine in Massachusetts, and that of the Pacific Electric in the vicinity of Los Angeles. One officer, in mentioning the interest of his road in the establishment of truck service to recapture lost traffic in certain territories, stated that in such situations a trucking service controlled by the railroad, to extend not only from station to station but also including a pick-up and delivery service, might solve the problem.

Another speaker called attention to the fact that carload as well as l.c.l. business is being lost to motor trucks. This speaker predicted that, as highways are improved and motor truck operations become more systematized, greater savings in operating expenses will be made possible by the distribution of l.c.l. freight to local stations by motor trucks, regardless of whether or not store-door service is offered.

On the question of motor truck or tractor and trailer operation in terminals, it was brought out that operating economies of a substantial nature were thus made possible. It was also pointed out that several reasons besides that of economy might make it advisable for a railway to establish terminal truck service. One speaker stated that his company had established truck service in its terminals more to secure expedited service than to effect economies in operation.

During the past year, more attention seems to have been paid to motor coach operation than to motor truck operation by the railways. Perhaps the reason for this has been that the losses of passenger traffic sustained by the railways have been easily subject to exact determination. Motor truck competition has not yet reached the advanced stage of motor coach competition, but it is generally admitted that it may be expected ultimately to be of the same extensive and intensive character.



Yelloway-Pioneer Motor Coach Operating Between Los Angeles and New York

Long Haul Transportation by Motor Coach*

Inauguration and operation of transcontinental service described—System has 9,000 miles of line

By W. E. Travis

President, Yelloway-Pioneer Transportation System, Inc.

THAT the entire transcontinental operation of the Yelloway-Pioneer System could have been put into daily operation in the short period of a few months, so that passengers could leave New York and go to Portland, Ore., by way of Los Angeles, Cal., riding all the way in vehicles owned by and operated under the responsibility of a single company for the entire distance, has occasioned a great deal of comment. This has been made possible by two main factors, the consolidation of a number of companies which had originally been operating the greater part of this mileage, and the experience of the California Transit Company system which had for a number of years been operating a long distance service on the Pacific coast. We had originally developed a trained operating organization, a proven method of operation, and equipment which lent itself readily to the requirements of transcontinental work; and the problem of serving the larger field has been largely one of personnel and training and providing enough equipment of the proper character to meet the schedule requirements.

Operating Organization

The organization which operates the transcontinental service of the Yelloway-Pioneer System, Inc., is patterned after and functions like the California Transit Company, it being merely a multiplication of divisions, maintenance plants, etc. The development of this system of operation and maintenance has gone hand in hand with the development of our standard coaches, neither of which was built to fit the other, but both having developed concurrently around our experience in handling passengers over routes of some 500 to 1,200 miles on the Pacific coast. For this reason we have been building our own equipment, since no manufacturer can be so organized as to meet our changing requirements.

The result, as far as operating method goes, is not unlike that of a transcontinental railroad. The system is divided into operating divisions, each with its own maintenance facilities and allotted equipment, which includes a reasonable number of reserve coaches held at strategic points along the line.

We have regular stations at all of the main towns along the line, and certain designated places where we make regular stops to take on or discharge passengers in practically every settlement along the line. The main stops are made just as at a railway station, and the coaches arrive and depart on schedules which are very closely adhered to.

Making Schedule Time

It is interesting to note that our first transcontinental schedule from Los Angeles to New York called for arrival in the latter city at 12:00 noon, and the coach drew up at the station just as the whistles were blowing. Wherever possible we try to adhere to an average speed of 32 m.p.h., this, of course, varying slightly in places on account of mountain conditions, speed regulations, etc. There is a minimum of two through schedules approximately 12 hours apart over the entire transcontinental line and in many places where traffic warrants, schedules are much more frequent. Speeding beyond the legal limit at any place is not allowed, and in places where there is no legal limit our drivers are held to a maximum of 40 m.p.h.

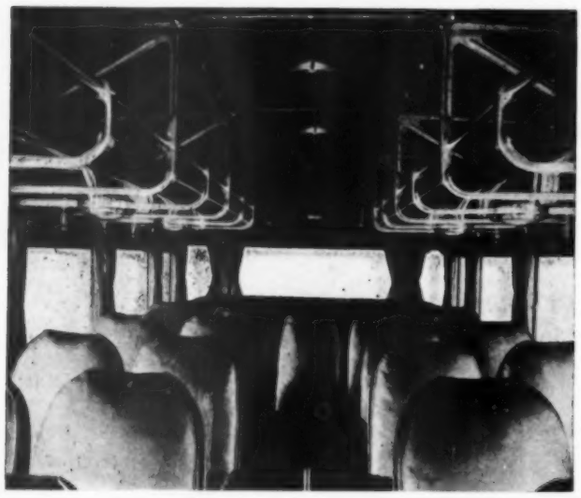
We have a bonus system run on the merit and demerit basis whereby drivers are rewarded or penalized for adherence to or failure to make schedules, and while we regularly penalize drivers who delay departure

* From an address prepared for the meeting of the Society of Automotive Engineers at Newark, N. J., on October 17.

from stations at their schedule time, we have never had a case where a driver is penalized for coming in late. Barring mechanical difficulties, a driver can make his schedule on time, and we penalize him whenever he is caught crowding the speed limit in order to make up loss of time between stations.

Handling Equipment

Over most of our system we keep "stand-by" equipment within two hours run of any point, and over that portion of the route where the population is reasonably dense we have our own emergency men or "trouble shooters" who can respond to calls from the drivers for minor repairs enroute. On the Denver to Los



Interior of a Yelloway-Pioneer Coach, Showing Reclining Chairs, Baggage Racks and Indirect Lighting System

Angeles division we have arangements with garage men all along the line to perform this service for us as needed, but there are surprisingly few road failures.

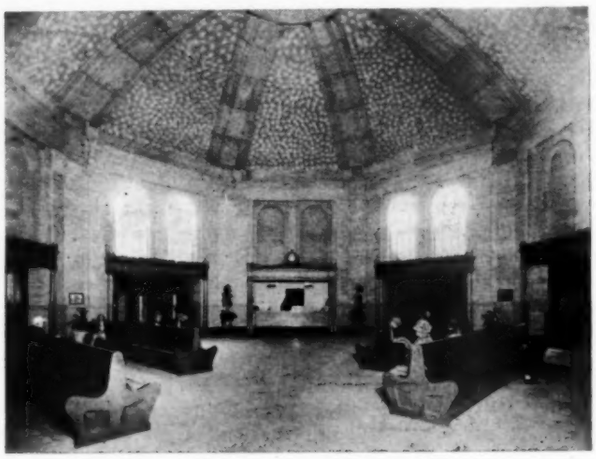
We make every effort to provide for the comfort of our passengers, both in the coaches and in the stations, and it is surprising to note the number of people who want to go clear through in the same car. Since it is obviously impossible to run a continuous schedule without holding the cars over for regular maintenance work, we try to do the next best thing and provide equipment as nearly uniform as possible throughout the entire system. It would be quite disastrous to transfer the passenger from good equipment to inferior equipment, which has been one of the greatest drawbacks to transcontinental stage travel under the system previously operating where there was no uniformity of either operating method or equipment.

All baggage is checked. The handbags and suitcases are carried in overhead racks inside the coach if possible. Any pieces too bulky to be placed in the baggage racks are put in a covered baggage carrier on the rear of the roof, and occasionally there is a surplus of small baggage which has to be placed here also. We want it instantly available so that a passenger may drop off at any point along the line without delaying the schedule. These requirements for passengers' comfort and service, of course, dictate the design of equipment.

Operating Conditions

The operating difficulties encountered on portions of the line likewise impose requirements which must be met in the design of our equipment. Starting from San Francisco, for example, we leave a uniformly cool climate where the air is nearly always moist. In the first 40 miles we go into the San Joaquin Valley where very often the temperature is 30 to 40 deg. higher than at San Francisco. Leaving Bakersfield for Los Angeles, the coaches run in second or third gear for nearly two hours and during eight months of the year this is in the burning heat of the semi-desert. We have never had a radiator which would not boil during this climb, and until recently the overheating of the engine caused it to lose a great deal of power on account of pre-expansion of the fuel. The difficulty has been overcome by the carburetor heat control recently put out by the Hall-Scott Motor Company which draws air at atmospheric temperature from outside the hood, passing it through the carburetor and into the engine without going through a hot spot. Regardless of the boiling of the water we get a cool fuel mixture which burns at full power. When necessary for starting or in cool weather the heat control allows us to draw air for the carburetor through a stove built around the exhaust manifold. This has not only eliminated trouble from overheating but has resulted in an increase in power and a more improved engine performance.

Leaving Los Angeles for Denver we go out across the Mojave Desert where the temperature is ordinarily so high that the radiator boils most of the way. This same car crosses the continental divide just beyond Gallup, N. M., at an elevation of 7,251 ft. In fact most of the way across Arizona, New Mexico and Colorado is more or less mountainous in character and more than a mile above sea level. High engine compression is necessary to provide full power at such an elevation, and this same engine has to run at approxi-



Interior of the Passenger Station at Oakland, Cal.

mately sea level in burning desert heat without troublesome detonation.

Most of the roads across the sparsely settled sections are still dirt and at times they are quite rough. Always there is a certain amount of dust which is drawn into the carburetors and into the coach body. Engine blocks, pistons and rings wear out very rapidly on this division in spite of the use of cleaners. We are hopeful of overcoming this by the use of a new air filter which has just been developed by Hall-Scott, and which we are now installing as fast as they can be delivered to us. The screens in this filter are constantly being washed down with oil as the coach runs, carrying the dirt down and precipitating it into a collecting reservoir. The oily screens take out practically all of the dust, and

are sufficiently large to permit unrestricted flow of air, so the adjustment of the carburetor is not destroyed. We ventilate the coach through small side windows at the sides of the main windshield where the air is as clean as possible, and the windows are covered with very fine brass screen. We endeavor to bring enough air in through these windows to make an out-draught at any other window which may be open, keeping out as much dust as possible, but this cannot always be done, of course, on account of wind.

Equipment Design

Rough roads make it very essential to have easy riding springs and we supplement these with air springs on the front. Our standard springs are much longer and wider than the average on coaches of the same size, both for comfort and to eliminate breakage. It has been our experience that the cost of maintaining the conventional springs in our service runs higher than the engine cost; hence for easy riding and for long spring life, it is necessary to use these very large springs.

The gasoline problem has affected many elements of the coach design. While we must retain a very high factor of strength in all parts, we try to eliminate all possible unnecessary weight. Most of our transcontinental coaches ready for the road weigh close to seven tons. It requires a lot of fuel to move this weight over the mountains, and since fuel is very expensive there it is vital that we use an economical engine but at the same time have ample power always available. Most of our coaches are geared 4.8:1 and make a little better than 45 m.p.h. at governed speed. To handle a coach with this gear ratio, the engine must have a flat torque which holds up at low engine speed. With these high compression engines and 4.8:1 worm gear, we are able to get from five to eight miles per gallon, and we find that an 80-gal. tank is about right to handle our worst conditions.

The factor of strength in the frame of our standard coach is eight, figured on the amount of force necessary to make a complete spring closure, and other stressed parts are designed with similar overload capacity.

We would not consider using an engine which is not equipped with a satisfactory oil filter. We like the freedom from carbon trouble which we get in the engines with which most of our fleet is powered. It is highly desirable from the standpoint of economy that routine maintenance work, such as valve grinding, changing of pistons and blocks, and all other work which recurs at regular and frequent intervals, should be done without loss of time, and this depends almost entirely on the design of the engine. Even the matter of bearing wear has occasioned serious thought on our part, and we are changing over all main bearings in the engines where this is possible to a new copper lead alloy bearing with no babbit. This new bearing metal does not flake off and cause loss of oil pressure as was common in the bronze back babbit bearings, but it cannot be used with any but an extremely hard crank shaft, because the bearing metal will scratch an ordinary steel shaft. Our first test set of these bearings was inspected at the end of 140,000 miles and showed a wear of less than 1/1000 of an inch. The coach in which this engine ran was used between Los Angeles and Oakland over the Ridge Route where the operating conditions are unusually severe owing to the continuous high speed operation at high temperature.

Coaches of This Type Are Built in the Shops of the Pioneer Company

Even such minor matters as the gas line between the vacuum tank or fuel pump and the carburetor come in for very serious attention, as a broken gas line can stop a coach just as completely as a broken spring. Even the best annealed copper tubing available vibrates off with amazing frequency unless it has flexible tubing at the points of maximum vibration. Our operating records show that delays due to broken gas lines run almost as high as from any other cause.

We are using balloon tires on all of our so-called standard jobs and on all new coaches purchased outside, and while they are giving us better mileage than high pressure tires there is still room for improvement. It takes a driver nearly an hour to change an inside rear tire in case it goes flat and the passengers always become impatient at these delays. Our tires are furnished under contract and we are getting 10 ply balloons, but we feel we would be much better off with 12 ply.

Body features which promote passenger comfort include chairs with reclining backs which latch in three positions. The seats are of double spring construction and very soft. While ventilation is carefully provided for, we feel that there is still room for improvement in the construction of window lifts and methods of preventing rattling of glass.

Obviously these coaches, running first over the desert and then across mountains, must be so designed that they will shut out cold weather, and they all require satisfactory and dependable heaters. We are also insulating the floors and walls of our new coaches as a reasonable degree of passenger comfort must be provided at all times. We even go so far as to install thermos water fountains in the coaches so that cool drinking water will always be available.

Maintenance Plan

The best coach in the world would not be successful in this kind of service without painstaking and thorough maintenance, beginning the day it is put in service. Our idea is to keep all wearing parts continuously lubricated and carry on systematic inspections which will enable us to replace all worn parts at the proper time before they fail unexpectedly and tie coaches up for repairs. It is our aim to keep the mechanical condition and general appearance of our coaches as nearly the equivalent of new ones as is humanly possible. This is carried out by systematic and regular inspection—the most important phase of our equipment work in long haul transportation. We do not have and do not want any unnecessary reserve equipment and consequently must schedule the maintenance very carefully to prevent forced lay-offs.

Our organization for handling this consists of two main maintenance plants, one at our factory at Oakland, Cal., and another one at Chicago. We plan to do all overhauling and major unit repairs at these stations. We also have what we call "A" maintenance stations at Portland, Oakland, Los Angeles, Gallup, Denver, Kansas City, St. Louis, Chicago, Pittsburgh and New York; and "B" maintenance stations at points approximately 200 to 250 miles apart throughout the entire system.

The "A" stations are at what we call our division points and correspond to the roundhouse on a railroad system where the whole coach gets a thorough cleaning, lubrication and inspection. These stations are rapidly being provided with such complete assemblies as transmissions, drive shaft sections, springs, engine heads, etc. Any minor repairs necessary for the proper operation of the coach between overhauls are performed at these stations.

When it is necessary to take a unit out of a coach it is returned to one of the overhauling stations where it is reworked, after which it is placed in stock for use wherever required. We try to keep the engines in the same chassis all the time on account of complications incidental to re-registration which follows the practice of changing engines about in various chassis. We find the laws very bad from this standpoint, as in some states we would be required to re-register a coach in case of an engine change, paying a full year's tax, which in some cases runs very high. The motor vehicle laws in these states were enacted with the idea of controlling automobile thefts, and probably the law makers never had any conception of the economic aspect from the standpoint of a motor coach operator.

A sufficient amount of spare parts stock to care for the ordinary requirements of the coaches on the division is carried at each of these main shops, and the system of handling the stock makes each of these stations practically a branch of the main stations at Oakland or Chicago, where purchases are made and full supplies carried. No local purchasing is done at the "A" stations except in cases of emergency. The "B" maintenance stations are concerned chiefly with lubrication of the parts which lose their oil most easily, together with inspection of the parts more important from the safety standpoint. No coach is ever allowed to leave either an "A" or "B" station without checking of the oil level in the engine, transmission and differential, filling of the radiator, checking of the tire pressure, cleaning inside and outside, and tightening of the wheel bolts.

A record of all work done on each coach is signed and turned in by the inspector. Uniform time cards are used throughout the system, on which all labor charged to repairs and maintenance is recorded. This card has been worked out so that we can allocate the work performed to any unit or main sub-assembly in the coach.

The stock rooms charge out all material against the same job numbers carried on the labor card, and by means of these two records the auditor is able to analyze the cost of labor and material used in the maintenance of each coach on separate records, consolidating it all on the same sheet of paper.

Our records of failures, which come in on the reports of the drivers and the "trouble shooters," enable us to determine the relative durability and dependability of each unit in the coach and to have an absolute record to guide us in strengthening the weak points. The monthly sheet which we compile from the shop cards and the stock room charge-outs gives us the cost record not only of failures but also of the regular maintenance work on each of these units or sub-assemblies.

Even our main overhauling stations are not elaborately equipped. They have the usual lathes, drill press, grinders and power cranes as well as small tools. Practically the only special tools that we have for engine work are boring bars with which we cut all main bearings to the size of the crank shafts at a single operation, and a tandem drill with which we cut both the bearing and bushing at the same time. We are now supplying our "A" maintenance stations with complete equipment for refacing and grinding valves and reaming valve seats.

The training of men to handle the maintenance of our coaches at all of these outlying stations has been one of the greatest problems we have faced in our expansion. We like to train our maintenance superintendents at the main plant where they can work successively in the chassis, axle, transmission and engine departments, to make them thoroughly familiar with all the equipment that they will have to handle as well as to have them familiar with the paper work which we require to get the necessary operating and cost records. This has not been possible in all cases, but we have been able to get enough good men from the operating companies which merged in the Yelloway-Pioneer System to enable us to carry on.

Our total miles of operation per month are increasing rapidly, the record for September showing a million and a half miles on approximately 9,000 miles of route. As indicated previously, inspection and maintenance of equipment are considered as the keynote of long haul transportation. This applies not only to the coaches,

but to every piece of operating property and operating methods as well. Passengers are no more willing to tolerate dirty and inadequate station facilities, or careless and indifferent operating employees, than they will put up with broken down and unclean coaches. Our standards are set by the demands of our patrons, and while it is a tremendous task to organize and perfect such an operating system, we expect in time to get the whole operation on a basis closely approaching our ideal.

S. P. Reports Earnings for Each Coach Line

IN order to determine the performance of its various motor coach lines individually, the Southern Pacific Motor Transport Company, in reporting revenues and expenses, shows these statistics for each line as a separate unit instead of for the system as a whole. By this means the lines which are making a favorable showing are readily apparent; and, on the other hand, attention is immediately called to those lines which are not so successful, so that special attention can immediately be given to them.

The through routes operated by the motor transport company are each handled as individual units in the accounting procedure. In the case of the short branch lines, however, these are grouped into special branch line units for accounting purposes, each unit containing two or more branch lines in a particular vicinity.

The Southern Pacific Motor Transport Company's form MT-2, which the accounting department uses in reporting revenues and expenses, is reproduced herewith. This is prepared to show revenues and expenses for any particular period compared with the corresponding period of the previous year. Opposite the items of operating revenue and expense are shown the amounts, the headings of each pair of columns being identified with the name of the particular main line or group of branch lines included in that unit. The statistics covered in the report are readily apparent from an examination of the reproduction of the form. The operating results are summarized at the bottom of the sheet to show total of freight and passengers carried on each line or group of branch lines, the average earnings and expenses for each truck or motor coach mile, the number of coaches or trucks assigned, and the amount of the investment in each particular line.

It is notable that the Southern Pacific uses separate classification numbers for its Oregon and California lines. Operating revenues in Oregon have classification numbers in the 400 series, while operating expenses are in the 500 series. In California, operating revenues of various kinds are covered in the 500 series, and operating expenses in the 600 series.

T.Ib-1280 MT-2

SOUTHERN PACIFIC MOTOR TRANSPORT COMPANY
REVENUES AND EXPENSES (INCLUDING TAXES) OF AUTO BUS OPERATIONS
FOR THE _____ COMPARED WITH CORRESPONDING _____ OF PREVIOUS YEAR Sheet ____ of ____ Sheets

CLASSIFICATION NUMBERS CALIF.	OREGON		Amount	Inc.—Dk.a. Dec.—Rkb	Amount	Inc.—Dk.a. Dec.—Rkb	Amount	Inc.—Dk.a. Dec.—Rkb	Amount	Inc.—Dk.a. Dec.—Rkb	Amount	Inc.—Dk.a. Dec.—Rkb	Amount	Inc.—Dk.a. Dec.—Rkb	Amount	Inc.—Dk.a. Dec.—Rkb	Amount	Inc.—Dk.a. Dec.—Rkb
			(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)
		OPERATING REVENUES																
500	401	Passenger																
501	402	Freight																
502	403	Express																
503	404	Baggage																
504	405	Mail																
505	406-1	Other Transportation																
520	406-2	Station and Car Privileges																
521	406-3	Storage																
522	406-4	Rent from Equipment Hired																
523	406-5	Rent from Buildings and Other Property																
		Total Operating Revenues																
		OPERATING EXPENSES																
630	530	Buildings																
631	531-1	Machinery and Tools																
----	531-2	Service Car Expenses																
632	532-1	Equipment—Tires and Tubes																
633	532-2	All Other Repairs																
		Total Maintenance																
600	501	Superintendence of Transportation																
601	502-1	Passenger Car Operators																
602	502-2	Freight Car Operators																
603	502-3	Baggage, Mail and Express Car Operators																
604	503-1	Fuel for Power																
605	503-2	Lubricants and Other Supplies																
606	----	Service Car Expenses																
607	504	Station Employes																
608	505	Station Expenses																
609	506	Damages—Freight and Baggage																
610	507	Garage Labor and Expenses																
611	508	Other Transportation Expenses																
614	509	Leased Cars																
		Total Conducting Transportation																
650	530	Superintendence and Solicitation																
651	531	Advertising																
652	532	Miscellaneous																
		Total Traffic																
660	550-1	Salaries and Expenses—General Officers																
661	550-2	Salaries and Expenses—General Office Clerks																
662	551-1	General Office Supplies and Expenses																
663	551-2	Stationery and Printing																
664	557-1	Store Expenses																
665	553	Insurance																
666	553	Injuries and Damages																
667	554	Law Expenses																
669	555	Rent of Facilities																
670	556	Rent of Equipment																
671	557-2	Miscellaneous General Expenses																
		Total General and Miscellaneous																
		Total Operating Expenses‖																
		Net Operating Revenues																
633	523	Depreciation																
668	503	Taxes Assignable to Operation																
		Net Operating Income (Black) or Loss (Red)*																
		Tons of Freight Carried																
		Number of Passengers Carried																
		Auto Truck Miles—Freight†																
		Auto Bus Miles—Passenger†																
		Average Earnings per Total Truck Mile—Cents																
		Average Expenses per Total Truck Mile—Cents																
		Average Earnings per Total Bus Mile—Cents																
		Average Expenses per Total Bus Mile—Cents																
		Number of Motor Buses Assigned																
		S. P. M. T. Co. Investment in Buses, Tools and Other Facilities																

Note:—*This report includes results of actual operations only. Guarantee payments from S. P. Co. and other non-operating income charges and credits are not included.
†Includes Non-Revenue Freight Miles (a) (b) (c) (d) (e) (f) (g) (h) (i) (j) (k) (l) (m) (n) (o) (p)
‖Includes Non-Revenue Passenger Miles. (a) (b) (c) (d) (e) (f) (g) (h) (i) (j) (k) (l) (m) (n) (o) (p)
‖Excludes Depreciation and Taxes which are stated separately below item "Net Operating Revenues"

Issued by Accounting Department,
San Francisco, California, _____, 192__

NOTES PERTAINING TO INDIVIDUAL LINES WILL BE FOUND ON REVERSE SIDE

Correspondence in relation to this statement should be addressed to the Auditor.

Form Used in Reporting Revenues and Expenses of Motor Coaches on Various S. P. Routes

Cost Information Is Essential*

Each motor coach route should be analyzed separately--
How design can be improved

IT is our duty to reiterate the statement of last year's committee with all the additional emphasis that can be given: "The transportation companies are apparently not securing the information which they should have to analyze properly the economics of either their motor coach or their railway operations." The results from questionnaires have indicated that there should be a direct method of determining how our commodity is being received within each district. This commodity is being sold in one place at a large profit and in another it is not producing the out-of-pocket cost of the service. Each route is a separate branch, attempting to sell the product, "seat miles." In analyzing the results, operators are using the short cut analysis of net results of the total operation. It seems to be accepted that if an operation is producing more than the average cost of operation, the route is showing a profit. Simple analysis will indicate this to be untrue. The functions of cost vary with the investment required to do the work on the given route, the schedule speed, the topography and the traffic characteristics. As a rule, the average cost of operation will not give the necessary information.

The reasons which we believe justify the segregation of statistics to individual routes are as follows:

1. To keep a constant check on the net income possibilities of a given route.
2. To avoid the necessity of an excessive amount of time being spent by expensive survey engineers in trying to determine the facts when there is a feeling that a given route is not justifying itself.
3. At the time a change is contemplated, statistics will be available on short notice, which will be reliable.

Practically every railway operator admits that there are possibilities in the proper use of the coach to either curtail expense or add to the net revenue. It should be apparent at once that this can only be done by an accurate and continuous knowledge of the actual cost of each operation.

Getting Cost Information

The method of acquiring this information is not nearly so complicated as it seems, and the actual cost of doing the cost keeping work is insignificant in proportion to the value of the information received. Most of the data required are already gathered in connection with the statistics ordinarily kept by operating companies for obtaining the usual average operating costs. It is necessary merely to prorate these costs upon the proper practical units which determine their variation. The general method should be based upon the standard "Classification of Accounts for Bus Operating Companies", adopted by the American Electric Railway Accountants' Association in 1925. The proration and the analysis of operating costs by classes of service should be determined in co-operation with the operating department head, who is familiar with the effect of the several factors controlling these costs.

The method is simply that each item of cost, as prescribed by the classification of accounts, be prorated over each route or group of similar routes on the basis of three units, instead of being averaged and prorated solely on the "coach mile" unit. These three units are the "coach," the "coach hour" and the "coach mile." Also any item which can be applied directly against a given route or group of routes can be so applied and thereby increase the accuracy of the result. The second unit, the "coach hour", may sometimes have to be broken into two parts, which might be called the "operating coach hour" and the "total coach hour" for use on routes or kinds of operations where the layover time is a considerable proportion of the total time.

Units for Cost Finding

The "coach" unit is used for the proration of charges which depend on the number of vehicles it is necessary to own. Items of expense which are subject to variation according to the amount of investment in rolling stock, necessitated by the operation of a given route or group of routes, are distributed in the ratio of the maximum number of coaches in use on this route at the peak hour to the maximum number necessary to maintain peak hour service on the entire system. This includes investment charges, not only for rolling stock but for garages and shops, and items of similar nature. The fixed charges on spare equipment are thus distributed among the several routes.

The "coach hour" unit is used for the proration of those charges which depend upon the number of hours a vehicle is running or in use. It provides a much more equitable unit for the distribution of maintenance of equipment and similar charges because it is more nearly a factor of the speed of operation.

The "coach mile" unit is used for prorating those costs which depend on the number of miles a vehicle operates.

The following tabulation shows the unit applied to each item of the standard classification of accounts, as used by one operating company.

A Proposed Method of Distribution of Costs to Routes and Classes of Service

Account	Method of Distribution
I Transportation Revenues	Direct
1201 Passenger revenue	Direct
1202 Baggage revenue	Direct
1203 Special coach revenue	Direct
1204 U. S. mail revenue	
1205} Other miscellaneous transportation	
1206} revenues	Coach
II Miscellaneous operating revenues	
1210 Station and coach privileges	Coach
1211 Parcel room receipts	Coach
1213 Rent of equipment	Coach
1214 Other operating revenue	Coach
Operating Expense Accounts	
I Maintenance Plant and Equipment	
1301 Superintendence	Operating coach hours
1302 Maintenance department rents	Coach
1303 Maintenance buildings, fixtures and grounds	Coach
1304 Maintenance coach bodies	Operating coach hours
1305 Maintenance coach chassis	Operating coach hours
1306 Tires and tubes	Coach mile

* From the report of the Committee on Bus Operation, presented at the American Electric Railway Transportation and Traffic Association, held at Cleveland, Ohio, on September 22-28.

1308 Maintenance shop and garage equipment	Operating coach hours
1309 Maintenance and operation service car equipment	Operating coach hours
1310 Miscellaneous shop expenses	Operating coach hours
1311 Retirement expense	Coaches
II Operating garage expenses	
1315 Fuel for revenue vehicles	Coach mile
1316 Lubricants for revenue vehicles	Coach mile
1317 Garage employees	Coach
1318 Garage supplies and expenses	Coach
III Transportation	
1320 Superintendence	Operating coach hours
1321 Coach drivers and conductors	Man-hours
1323 Transportation rents	Direct
1324 Station expenses	Coach
1326 Freight and baggage damage	Direct
1327 Road expense	Direct
1328 Other transportation expenses	Operating coach hours
IV Traffic	
1330 Superintendence and solicitation	Operating coach hours
1331 Advertising	Operating coach hours
1332 Traffic rents	Operating coach hours
1333 Miscellaneous traffic expenses	Operating coach hours
A — Administrative	
1334 General officers: Salaries and expenses	Operating coach hours
V Administrative and General expenses	
1335 General office clerks: Salaries and expenses	Operating coach hours
1336 General office expenses	Operating coach hours
1337 General law expenses	Operating coach hours
1338 Administrative supplies and expenses	Operating coach hours
B — Other general expenses	
1341 Employees welfare	Coach
1342 Valuation expense	Coach
1343 Regulatory commission expense	Coach
1344 Amortization of licenses, franchises	Coach
1345 Injuries and damages	Direct (percentage of revenue)
1346 Insurance	Coach or gross revenue
1347 Storeroom labor and expense	Operating coach hours
1348 Franchise requirements	Direct
1349 Joint operating expenses transferred, credit	Direct
1350 Rent of rolling stock	Coach
1351 Other general expenses	Operating coach hours
1405 Taxes:	
Federal, Capital stock	Coach
State, city, county	Coach
Seat-mile	Direct
Gasoline	Coach mile
Non-operating Income:	
Interest on bank deposits	Operating coach hours
Miscellaneous income	Operating coach hours
Income Deductions:	
Interest on funded debt	Coach
Interest on unfunded debt	Coach
Miscellaneous debits	Operating coach hours

After all charges are prorated over the various routes, they are reduced to a cost per mile unit for each route, for convenient comparison with revenue per mile or other statistics and for a comparison of costs between various routes. The routes can then be grouped in any manner desired and can show the results on those lines which can be expected to be profitable, as separate from those lines which are operated from other considerations, and can thus furnish all the information necessary for the guidance of the policy of the company towards the community served, in regard to fare, rates, extensions, curtailment, etc.

Method Permits Comparisons

Incidentally, such a method should make it possible to compare operations in various parts of the country with some degree of accuracy. Previous reports have called attention to the fallacy of attempting to make such comparisons where the unit costs were based solely upon the proration of the coach mile unit.

With respect to service paralleling railway service, four companies reported on 12 routes. The reasons for establishing these lines are equally divided between elimination of competition by other coach operators and preliminary steps toward abandonment. There is woven into these considerations the additional possibility of extension of these interurban parallel operations to new territory not previously served by the rail lines.

Only one company reports that its lines are justified by net income showing at present. The others feel that they have been justified in going into this parallel service in view of the loss that might have resulted from competitive service by another company. In other words, their net loss through the combined service is not as great as it would have been with the revenue divided between two operators.

With respect to interurban coach operation into new territory not previously served by the company's railway lines, in many cases paralleling, to some extent, the lines of other steam or electric roads, four companies reported on 30 routes. One holding company within this group reported for 24 of these routes and therefore the information received from this company is the only information which we are reporting. Of the routes reported,17 are justified by net income, while seven show an out-of-pocket loss as the route was analyzed separately. However, the reporting company advised that through the interchange travel and the degree of popularity enjoyed, the seven non-paying routes are apparently justified. It is the opinion of this company that in the course of years, the continuation of the non-paying routes can be offset by fare revisions and an increase in the number of passengers that may develop after new equipment and better service are provided. This company reports that the net income of the total operations is quite satisfactory and that future possibilities are even better than present.

Proposed Changes in Design

Everyone in the motor coach industry recognizes the tremendous improvement achieved in recent years in chassis and motor design. Simplicity of construction, the accessibility and interchangeability of parts have been sought for and largely attained. Much has been accomplished also in the field of body design. Body lines and exterior finish, the interior arrangement and finish, all show a great deal of thought and artistic feeling. The seats and their upholstery, the ventilation and lighting have been tremendously improved also.

In endeavoring to accomplish all these things, the manufacturers have had a great deal to contend with. The industry has had a rapid growth. The factor of obsolescence has been an important one. Not the least of the manufacturers' troubles has been the insistence of operating companies and individual operators that certain pet ideas be incorporated in the production of each order, making mass production difficult and thereby increasing the cost for each article.

All this is recognized and the difficulty under which the manufacturers have had to labor is fully appreciated, but the thought has nevertheless been expressed that perfection has not been achieved yet and that the following matters should receive further consideration:

(a) Coach operator's comfort.
(b) Passengers' comfort.

(c) Incorporation in body design of features which would reduce the necessity for trouble calls and the resulting interruption to service and loss of vehicle.

(d) Greater attention to simplicity in body construction, permitting increased accessibility and interchangeability of parts.

(e) Incorporation in the standard vehicle of many features of body design or accessories which heretofore have had to be specified as extras.

(f) Desirability of beginning standardization.

While recognizing that there will always be specific features which individual companies and operators may want to have incorporated into the body design of the vehicle which they purchase, and further, that certain of the improvements desired may tend to increase the cost of the vehicle, nevertheless the conclusion has been reached that there is yet a wide field of study in coach body design which the manufacturers should undertake, in co-operation with the engineering and operating members of the association, either through the medium and with the co-operation of the existing committee, or through the creation of a special committee to consist of operators, engineers and manufacturers.

Operator's Comfort

A coach operator who is comfortable while on the job will do more and better work and will do his work in a safer and more courteous manner than will a man who is not comfortable. With that in mind, it is suggested that in designing coaches, the manufacturers should give special attention to the following points:

A.—Operator's seat
1. Ability to raise and lower seat (height).
2. Ability to move backward or forward to take care of different sizes of drivers.
3. Angle at which seat is set to floor.
4. Height and curvature of back.

B.—Controls
1. Size of steering wheel.
2. Angle at which steering wheel is set to floor.
3. Location of emergency brake (whether on left or right) and ease with which it can be reached.
4. Should emergency brake handle be shoved forward or pulled toward driver?
5. The height of shifting lever and type of knob.
6. Location and convenience of accelerator pedal and what support there is to foot (heel).
7. Height of clutch pedal from floor and stiffness of spring controlling it.

C.—Windshields and wipers
1. Does windshield wiper clean all of windshield?
2. Does windshield wiper swing in semi-circle or does it work backward and forward?
3. Windshield of one, two or more panes.
4. Windshield with openings at top and bottom to let in air, and disadvantages of such ventilation in cold weather when there is a constant draft through openings.

D.—Protection to operator from rear
1. Desirability of partition between operator and passengers.
2. Means of preventing glare from coach lights; curtain back of operator.
3. Setting windshield at angle to eliminate glare.
4. Should operator have a door on his left? If not, what means of ventilation is there for his feet?

E.—Operator's traps
1. Provisions made for holding transfers, punch, change carrier, schedule card, watch holder, etc.
2. What provision is there for run number plate, for signs indicating express service or fact that coach is full?
3. Provision for rag with which to wipe seats.
4. Provision for compartment to hold small set of tools.

F—Visibility of fenders to operator
1. Is operator able to see the two fenders from his seat, so that he can judge how close to get to curb?

G.—Visibility through mirror
1. Is he able to see inside of coach and left side of coach?
2. Is he able to look through rear window and see behind? In other words, is there a mirror inside and outside of coach to left?

H.—Handling doors, windows and destination signs
1. Location of door handle and ease with which it works.
2. Ability to open and close windows.
3. Accessibility and ease of manipulation of destination sign handles.

While there is likely to be a difference of opinion, as for instance whether the hand brake should be located to the left or to the right of operator, a thorough and scientific study of all the factors enumerated above which vitally affect the driver's comfort should be made.

Other Proposals

Improvement can be made in the matter of furnishing information to passengers. Frequently the outside destination signs are entirely too small. No provision is made in the interior of the coach for signs stating rate of fare, method of fare collection, forbidding spitting or smoking, the carrying of dogs or requesting passengers not to talk to operator. Individual companies usually introduce such signs themselves, sometimes in an amateurish way and always at considerable cost. It is felt that suitable lettering in the form of decalcomania could be provided by the manufacturers, with improved visibility, appearance and lower installation cost.

Keeping the coach on the road and on schedule is essential to good operation. Analysis of trouble calls shows much delay caused by brake adjustments. If it were possible for the operator to make these adjustments, there would be a large saving and improvement in service. Some manufacturers have made provisions for easy and quick adjustment of brakes by operators.

Blown fuses and burnt out bulbs cause many trouble calls. A compartment containing a supply of bulbs and fuses, so placed that bulbs will not be broken or lost, would eliminate most of these trouble causes. Of course, bulbs should be standardized in two sizes for each coach.

Trouble calls are frequently made for motor missing. In many cases the "missing" can be remedied by merely changing a spark plug. A suitably fitted compartment for spark plugs and tools for changing them should be furnished.

The crank handle should have a definite place provided for it, so that it will not be lost. There should also be a fixed place for the fire extinguisher. When it is necessary to carry sand to be used on the stairs or pavements in emergencies, a suitable compartment should be provided.

Wiring is another frequent source of trouble because of shorts. It should be accessible and the various connections easily identified.

Simplicity of body construction, accessibility and interchangeability of parts are important. When a body panel is dented, it is desirable that it can be replaced quickly. Similarly, should a roof be dented, it is desirable to be able to repair it without ripping out a great deal of the interior finish. It is felt that more thought should be given these matters when the body is being designed.

Many of the accessories now placed on coaches as extras should be incorporated in the body design. That brings us to the matter of standardization. There is no good reason why the time has not arrived to begin standardizing certain features of body design.

Missouri Pacific and Cotton Belt Announce Plans

Former proposes large motor coach system in Arkansas and two lines in Missouri—Latter begins operations in Arkansas

THE plans of the Missouri Pacific and the St. Louis Southwestern for extensive motor coach and motor truck operation in their territories have begun to take definite shape. In the case of the Missouri Pacific, a hearing has been held on its applications for 22 motor coach routes paralleling its lines in the state of Arkansas, and a hearing has also been held on an application for one line of substantial length in Missouri. The Missouri Pacific has also purchased several independent motor coach lines in localities where it proposes to carry on motor coach operations, co-ordinated with its rail service. The operation of an extensive system of motor coach lines has already been instituted by the St. Louis Southwestern.

Missouri Pacific Plans 22 Routes

The 22 motor coach routes proposed by the Missouri Pacific in the state of Arkansas were described in the *Motor Transport Section* of November 24, and are repeated in tabular form herewith. The hearing on the applications was held at Little Rock, Ark., on December 12. These 22 routes parallel virtually all of the railway lines of the Missouri Pacific in Arkansas and have an aggregate length of approximately 1,400 miles.

Proposed Missouri Pacific Motor Coach Routes in Arkansas

From	To	Approximate Length
Moark, Ark.	Walnut Ridge	40 miles
Walnut Ridge, Ark.	Newport	40 "
Newport, Ark.	Kensett	35 "
Kensett, Ark.	Little Rock	50 "
Little Rock, Ark.	Hot Springs	65 "
Benton, Ark.	Texarkana	130 "
Hope, Ark.	Nashville	30 "
Little Rock, Ark.	Fort Smith	175 "
Fort Smith, Ark.	Paris	50 "
Newport, Ark	Batesville	25 "
Hoxie, Ark.	Helena	150 "
Bald Knob, Ark.	West Memphis	95 "
Marianna, Ark.	West Memphis	50 "
Helena, Ark.	Brinkley	60 "
Little Rock, Ark.	Pine Bluff	50 "
Pine Bluff, Ark.	McGehee	70 "
McGehee, Ark.	Arkansas City	15 "
McGehee, Ark.	Arkansas-Louisiana state line (via highway 165)	60 "
McGehee, Ark.	Arkansas-Louisiana state line (via highway 65)	60 "
Eudora, Ark.	Arkansas-Louisiana state line	10 "
Lake Village, Ark.	Crossett	54 "
Halley, Ark.	Warren	50 "

The motor coach operations of the Missouri Pacific will be carried on by the Missouri Pacific Transportation Company, a Delaware corporation and a subsidiary of the Missouri Pacific Railroad. L. W. Baldwin, president of the Missouri Pacific, is president also of the transportation company, and P. J. Neff, assistant to the president of the Missouri Pacific, is also vice-president and general manager of the transportation company. Other officers of the transportation company are: F. P. Johnson, general auditor, who is also vice-president of the Missouri Pacific; F. W. Irland, secretary, who is also assistant secretary of the Missouri Pacific; and W. J. Wright, treasurer, who is also local treasurer of the Missouri Pacific at St. Louis. The Missouri Pacific Transportation Company has secured a license to transact business in the states of Missouri and Arkansas. Similar licenses are expected to be secured in other states in Missouri Pacific territory in the near future.

In Arkansas, the Missouri Pacific has acquired several motor coach lines. Two of these were previously operated by C. B. Johnson and extend from Fort Smith, Ark., to Paris and from Fort Smith to Russellville. The line of C. M. Rankin between Russellville and Morrilton has also been secured. The certificates covering these three routes have been transferred with the approval of the Arkansas Railroad Commission to the Missouri Pacific Transportation Company.

The lines of the Smith-Arkansas Traveler Company have also been purchased, but the Arkansas commission has not yet acted upon the matter of transferring the certificates to the transportation company. The Smith-Arkansas Traveler lines constitute the largest motor coach operation in the state of Arkansas and include the following routes: Little Rock to Fort Smith, Little Rock to Bald Knob, Little Rock to Forrest City, Little Rock to McGehee, Little Rock to El Dorado, and Little Rock to Hot Springs. The aggregate length of these routes is approximately 600 miles.

In Missouri the only line acquired thus far is a portion of the Scofield motor coach lines. The route secured extends from West Plains, Mo., to Bird's Point, via Alton, Doniphan, Poplar Bluff, Sikeston and Charleston. Operation of this property was taken over by the transportation company on December 1. The transportation company has also applied for a certificate from the Missouri Public Service Commission to operate a motor coach line between Kansas City, Mo., and Joplin. The length of this route is approximately 148 miles. In conjunction with the application of the transportation company to operate the Kansas City-Joplin motor coach line, the Missouri Pacific applied for authority to discontinue the operation of local passenger trains 212 and 215 between Pleasant Hill, Mo., and Joplin.

In its application the company states that the operation of trains No. 212 and No. 215 has been carried on at a loss for some time. It is pointed out, however, that these trains have carried numerous passengers and it is, proposed therefore, that permission be granted the transportation company to operate a substitute motor coach service, relieving the railway of the necessity of operating trains at a loss and securing for the residents along the route a continuance of necessary transportation facilities.

The transportation company proposes the operation of two round trips per day between Kansas City and Joplin, motor coaches leaving Joplin for Kansas City at 5:30 a.m. and 8 a. m., arriving at Kansas City 12 noon and 2:30 p.m., respectively. Southbound, the motor coaches will leave Kansas City at 3 p.m. and 5 p.m. and arrive at Joplin at 9:30 p.m. and 11:30 p.m. respectively.

This case is similar to that recently decided in favor of the Southern Pacific in its application to discontinue a number of branch line trains in California and to

substitute highway service, and involves some general questions as to granting a railroad company a certificate to operate on a highway where there are existing certificates in favor of independent operators. A hearing was held at Jefferson City, Mo., on December 17.

Proposed Motor Coach Lines of the Missouri Pacific in Arkansas and Missouri

The decision of the Missouri Pacific to engage in motor coach operation was reached following an extensive survey of the situation. Passenger revenues of the road from 1920 to 1927 have declined 33 1-3 per cent. Passenger revenues for these years are given below:

Year	Passenger Revenues
1920	$21,948,499
1921	19,240,495
1922	16,898,477
1923	18,970,393
1924	17,525,199
1925	16,536,035
1926	16,035,972
1927	14,652,502

Based on the figures for the first nine months, the passenger revenues of the Missouri Pacific for the year 1928 will probably be a million dollars less than they were in 1927.

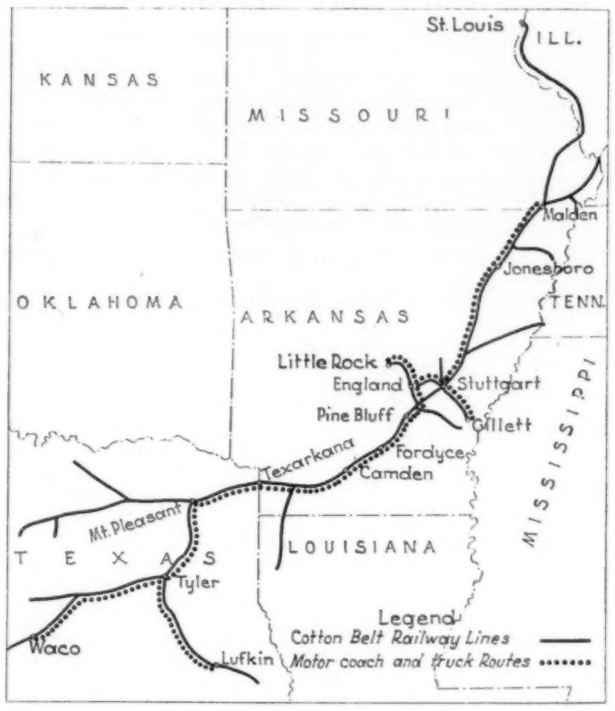
The survey of the situation indicated that a large amount of this decline in passenger revenue was the result of the competition of privately owned automobiles, but it was found also that several hundred motor coaches operated by private individuals or corporations, paralleling the lines of the Missouri Pacific, were securing millions of dollars of passenger revenue annually. The decision of the railroad to enter the motor coach field through a subsidiary company was reached in the belief that train service could be supplemented and improved in such a way by the operation of motor coach lines that many who now drive their own cars would find it more convenient and less expensive to use a joint motor coach and railroad transportation service. Another factor was the desire of the Missouri Pacific, as a major transportation agency in its territory, to conserve revenues in that territory and to develop it in a systematic way as it has in the past.

Cotton Belt Begins Operation

The *Motor Transport Section* of November 24 reported the organization of the Southwestern Transportation Company, subsidiary of the Cotton Belt. On December 9 the transportation company began the operation of motor coaches on several lines paralleling the railway routes of the Cotton Belt. In Arkansas the motor coach service covers routes between Little Rock, England, Stuttgart, De Witt, Gillett, Pine Bluff, Fordyce, Camden and Texarkana. Further service between Jonesboro, Ark., and Malden, Mo., began on December 15. Service between Stuttgart and Jonesboro will be inaugurated as soon as road conditions permit.

Trucking Service Provided

The Southwestern Transportation Company has acquired the franchise and equipment of the Arkansas Motor Express Company and has instituted motor truck service carrying mail, baggage, express and freight on the highways between all points where motor coach passenger service is provided. Contracts for carrying mail between Little Rock and those points have been secured, and a fleet of 16 motor trucks has been ordered to provide for the carrying on of the service.



The Cotton Belt's Motor Coach and Truck Lines. Those in Arkansas Are in Operation. Those in Texas Are Reported to Have Been Purchased

The transportation company has also ordered and secured delivery on a number of motor coaches.

The Arkansas lines of the Southwestern Transportation Company parallel virtually all of the railway lines of the Cotton Belt in that state. This is indicated on the map which is reproduced herewith. On this map are shown also motor coach and truck routes in the state of Texas. While it is reported that the Cotton Belt has purchased several independent motor coach lines covering these Texas routes, this has not been officially confirmed. The section between Tyler and Lufkin has been in operation for several months under a contract by the Cotton Belt with an independent motor coach line.

Seaboard Extends Motor Coach Operations in Florida

Through and local highway service now available between Jacksonville and Tallahassee in co-ordination with train schedules

White Motor Coach Used by Motor Transportation Company of the South

THE Seaboard Air Line, through its highway subsidiary, the Motor Transportation Company of the South, as briefly announced in the *Motor Transport Section* of October 27, page 859, has recently extended its motor coach services in its Florida territory.

By reason of these extensions, through service is now available between Jacksonville and Tallahassee, a distance of 165 miles, and also to several points out of Tampa, this latter service being co-ordinated with the schedules of the Seaboard's daily train, the "Southerner," from New York and Washington to Florida's east and west coasts.

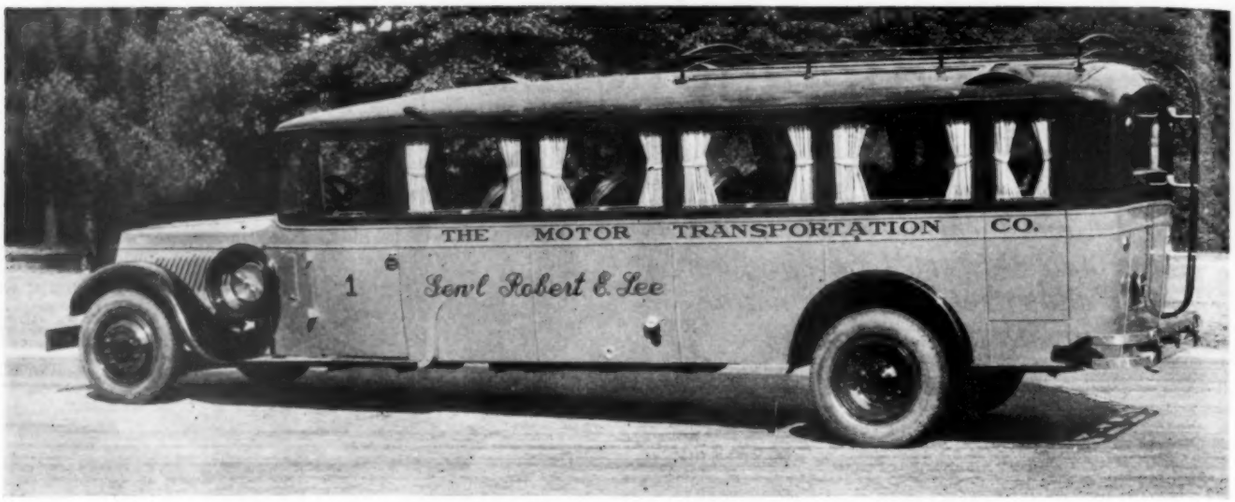
Jacksonville-Tallahassee Route

The Jacksonville-Tallahassee highway route is an extension of an original motor coach run from Jacksonville to Live Oak. The reasons for this extension were stated to be the desire of the railway to protect its local traffic in this territory from the inroads of independent motor coach competition and to co-ordinate the highway services of the Motor Transportation Company of the South with the through trains of the Seaboard operating to and from Jacksonville. In making this decision it was felt by Seaboard officials that the railway was entitled, more than any other transportation agency, to the local passenger travel of this territory to the development of which the railroad had contributed no small part.

At the present time six parlor coaches are assigned to this Jacksonville-Tallahassee route. Three daily round trips are made between the two termini while an additional round trip is made daily between Jacksonville and Live Oak. The total daily coach mileage amounts to 1,152 while each vehicle averages 192 miles per day. Of the six coaches, three are Macks with seating capacity of 13, 19 and 29 respectively, one is a White, seating 19, another an A. C. F. and the sixth a Fageol, each of the latter seating 21 passengers. The 13-passenger Mack coach is equipped with a large compartment for the handling of baggage and express.

Service Supplements Train Schedules

According to the present schedule, motor coaches leave Jacksonville at 7:40 a. m., 12 noon, 2:00 p. m. and 5:00 p. m. The noon run from this point terminates at Live Oak while the other three continue through to Tallahassee. This service is not in lieu of train service but rather supplements the regular runs of Seaboard trains between the points served by the motor coaches. The run between Jacksonville and Tallahassee is made by the coaches in approximately 5½ hours. Thus, with about 30 scheduled stops en route and a 10 to 20 minute halt at Madison, an aver-



One of the Macks in Service on Florida Runs

age of approximately 30 miles an hour is maintained over the route. Coaches on the return runs to Jacksonville operate out of Tallahassee at 7:15 a. m., 1:00 p. m. and 4:00 p. m. and out of Live Oak at 7:00 a. m.

Railway Tickets Honored on Coaches

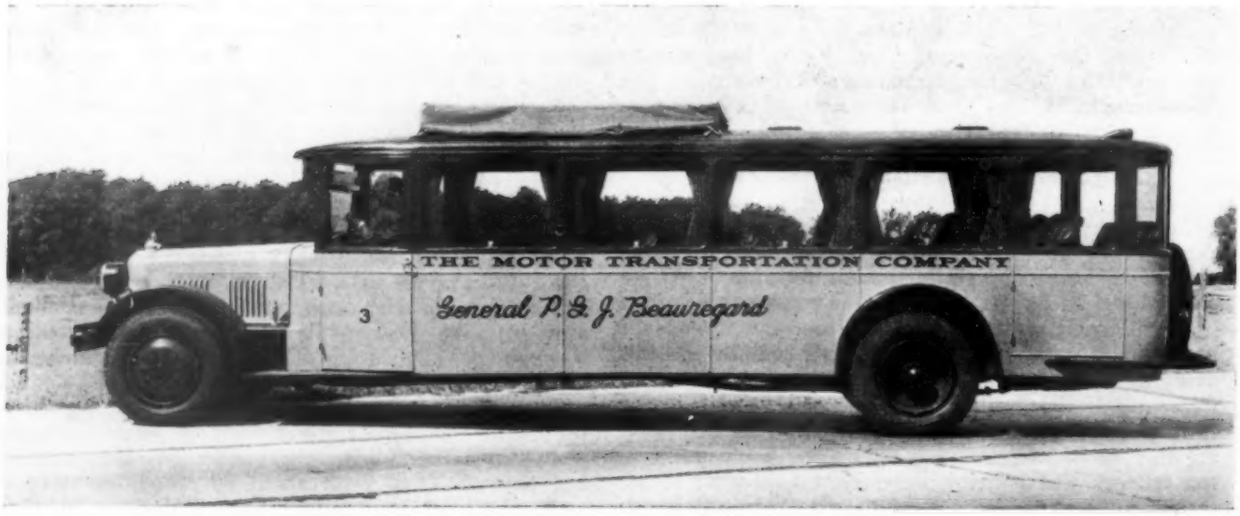
Arrangements have been made for honoring, on motor coaches, all railway tickets, issued by the Seaboard, for journeys between Jacksonville and Tallahassee or intermediate points. Thus a passenger journeying to one of these points, served by the motor coaches, may elect, upon his arrival, by train, in either Jacksonville or Tallahassee, to proceed to his destination by highway. For example, if a passenger holds a railway ticket of the Seaboard for transportation from Richmond, Va., to Tallahassee, such a ticket will be honored on the motor coaches of the Seaboard from Jacksonville to Tallahassee if the passenger elects to make this use of it. No tickets issued by the Motor Transportation Company of the South, however, are honored on the Seaboard trains.

Ordinary hand baggage is carried for the motor coach passengers without charge and is transported in the same coach as its owners. In a case where a train passenger transfers to a motor coach, however, such baggage as he may have checked through to his destination at the beginning of his train journey, is handled through to that destination entirely by train. Likewise, if a motor coach passenger wishes baggage, other than that of the ordinary hand type, to be carried for him, it is required that he purchase a railway ticket. On this latter, the baggage may be checked and is handled by train while the ticket in turn is honored on the motor coach for the transportation of its holder. In no case is baggage handled by train for passengers holding only the tickets issued by the Motor Transportation Company in its own name.

In its efforts to obtain patronage for this Jacksonville-Tallahassee motor coach route, the Seaboard, in its advertising, has stressed the desirability and fairness of patronizing the subsidiary of a railway which serves the territory in many different ways and in a reliable manner under all circumstances and conditions. One of these advertisements is reproduced in an accompanying illustration.

Operations Out of Tampa

The operations of the Motor Transportation Company of Tampa, as stated in the foregoing, are in co-



An A.C.F. Parlor Coach, Used in Seaboard Highway Operations

ordination with the runs of the Seaboard train from the north, the "Southerner." Passengers destined to points south of Plant City, via the "Southerner," are carried into Tampa by train and thence transferred to the motor coaches in which their journey is completed. All baggage of these passengers is also handled out of Tampa by the motor coaches. This arrangement, according to the announcement, is to continue until January 2, 1929, when it is planned to reestablish train service from the east to and from Plant City or Tampa to Sarasota in connection with the "Orange Blossom Special" or the "Southerner."


SPEND YOUR MONEY WITH YOUR HOME CONCERN

Give What Follows Your Earnest Thought

The Motor Transportation Company of the South, which has established its bus service between Jacksonville and Tallahassee, is owned by the Seaboard Air Line Railway Co. Therefore, when you patronize the busses of the Motor Transportation Company you are spending your money with the Seaboard. The Seaboard is your home railroad. It carries your freight, your mail and your express. It serves you in rain or sunshine; in heat or cold. Its agents, its section forces, its train crews, and its commercial representatives live and spend their money among you. The Seaboard contributes substantially to your taxes. The Seaboard buys its ties and its lumber from people who live and spend their money among you. There are many, many ways in which the Railway contributes to the support and welfare of your community.

Think the matter over well and your own judgment will lead you to the conclusion that common fairness and mutual protection require you to patronize the busses of the Seaboard rather than of a line contributing in no noticeable way to the support and welfare of your community.

CHAS. R. CAPPS
First Vice President
Seaboard Air Line Ry.
Norfolk, Va.

Seaboard Advertising Appeals for Community Support of a Home Concern

Approves Railway Motor Coach Subsidiary

ATTORNEY Examiner Leo J. Flynn of the Interstate Commerce Commission, in submitting his report on case No. 16552, in which the organization by the Spokane, Portland & Seattle of its motor coach operating subsidiary was complained against as a violation of provisions of the Interstate Commerce Act, recommended a finding that the charges had not been sustained. The complaint was made by A. Jaloff, proprietor of the Columbia Stages, who alleged that the act of the S. P. & S. in incorporating a subsidiary company and operating through that company a motor coach line between Portland, Ore., and Astoria, was in violation of the provisions of paragraph 18 of section 1 of the Interstate Commerce Act relating to the obtaining of a certificate of public convenience and necessity, and of section 15a of the act relating to the recapture by the government of the excess earnings of common carriers.

The complainant contended that the railway, by engaging in the motor coach business, in effect had extended its line without having first obtained a certificate of public convenience and necessity, as required by paragraph 18 of section 1. Regarding this contention, Examiner Flynn said that in Tariffs Embracing Motor Truck or Wagon Transfer Service, 91 I.C.C. 539, the commission found that its jurisdiction did not cover truck service which extended beyond terminal districts and became what was commonly designated as a line-haul and which might in effect act as an extension of the lines of a rail or water carrier. He said that in the present state of the law, the railway company was not required to obtain a certificate of convenience and necessity before it commenced the operation of the motor coach lines through its subsidiary.

Accounting Rules Observed

Another contention made by the complainant was that the investment of the railway company's funds in the transportation company and advances made to the latter without first obtaining the authority of the commission was a diversion of railway company's funds, contrary to the provisions of section 15a relating to recapture of excess earnings. Examiner Flynn reported that the investment of the railway company's funds in the stock of the transportation company and loans made to the latter were charged on the railway company's books to the account of investment in affiliated companies. No charge, he said, had been made to railway operating expenses by reason of the advances made to the transportation company. It did not appear that the books of the railway company were not kept in compliance with the commission's accounting regulations, and the records, according to Examiner Flynn, did not disclose a violation of the provisions relating to the recapture of excess earnings.

Interchangeable Tickets Criticized

The only criticism of Examiner Flynn had to do with the selling of tickets that might be used on either motor coaches or railway trains. He said there was no reference in the railway tariffs to the transportation company's service, nor did the evidence show the allowances made to the transportation company for any service rendered by it to passengers traveling on tickets sold by the railway company. He said that if the allowance was such that the amount accruing to the railway company for the actual rail service rendered by it, independent of any transportation by the motor coach line, was less than the published fare for such rail transportation, there was a violation of the act. According to Examiner Flynn, the law requires that all charges for transportation, subject to the interstate commerce act, be filed and that such charges be collected without deviation. Charges for service subject to the act had to be collected and retained entirely by the railway company, and it was not in compliance with section 6 to publish a through fare which covered rail service by the railroad and coach service by the transportation company without separately stating the charge for the rail service. The commission, Examiner Flynn said, should require carriers subject to the act, when filing tariffs which cover a combination of rail and motor coach service to comply with the provisions of the act and tariff regulations of the commission.

Shortly after holding the hearing on this matter, the commission was advised that the complainant had sold his motor coach line to the S. P. & S.

Commissions Unite for Motor Coach Regulation

BECAUSE of the fact that Congress has not yet enacted appropriate legislation for the regulation of interstate transportation of passengers for hire by motor vehicles and "solely in the interests of the public welfare and the promotion of public safety and convenience," the regulatory commissions of Arkansas, Colorado, Louisiana, New Mexico, Oklahoma and Texas have undertaken a co-operative and uniform application of state laws regulating the transportation of passengers for hire by motor vehicles over the public highways interstate within the respective states when such operation proposed is also interstate between two or more states. At a meeting of representatives of these commissions, called by the Texas Railroad Commission and held at Amarillo, Texas, on September 6, a code of procedure was adopted covering "applications for certificates to operate a motor transportation service for hire filed with state regulatory authorities where the proposed operation is both intrastate and interstate, or exclusively interstate."

This code of procedure was described by Clarence E. Gilmore, chairman of the Railroad Commission of Texas, at the recent meeting of the National Association of Railway and Utilities Commissioners in New Orleans, La. The following is an abstract of the code:

When an application for a certificate is filed under the law of any state, and which includes a proposed interstate operation, either in connection with intrastate operation, or exclusively interstate, the commission in the state where the applicant resides shall send a copy of such application to the commission of such other state or states in which the service is proposed.

The commission in the state where the applicant resides will prepare and submit to the applicant a questionnaire to be answered under oath in duplicate or triplicate as the number of states involved may require. The respective commissions shall furnish copies of such answers to the commission or commissions in the states involved in the proposed operation. The questionnaires of all states should be uniform.

The answer to the questionnaire should disclose whether the proposed operation is of sufficient magnitude and importance to suggest or require joint consideration. In transmitting a copy of the questionnaire, the resident commission will suggest whether a conference of commissioners is desired. Co-operating commissions or commissioners will indicate their view as to the desirability of a joint conference, and if any commission co-operating in the particular case desires either a joint hearing or a joint conference, it will be arranged for as promptly as possible and at a time and place agreeable to the commissioners, having in mind also the convenience of the applicant.

In all joint hearings or conferences a commission may be represented by one or more of its members or designated representative of its staff.

For the purpose of permanent organization, commissions parties to this co-operative plan or agreement shall select a member of the commission of a state in the group as chairman, another as vice-chairman, and a commissioner or some member of a commission staff as secretary. The chairman shall preside in all meetings of the group, and from time to time, such matters as any commissioner may desire to bring to the attention of the group shall be filed with the chairman and circulated by him or the secretary under his direction to all members of the group for consideration; and if it be a question upon which action is desired, a written ballot shall be filed for each member of the group, a majority vote determining the issue.

Following a joint hearing or such other co-operative consideration as the commissions may decide upon, views as to the proper judgment to render may be exchanged in writing or by personal conference as the character of the case may suggest, and as may be agreed upon by the parties.

This agreement is not intended as having to do with purely intrastate operations, and it is recognized as binding in intrastate matters in a moral sense only.

If it should happen, in a proceeding involving two or more states, that there should be a disagreement as to the final judgment to be rendered, and an agreement cannot be reached, then each state will be free to dispose of the proceeding according to its own judgment.

The agreement may be amended at any time by majority vote of the parties hereto, either at a personal conference or upon written vote after a proposal to amend shall have been circulated by the chairman.

* * * *

Tractor with Loaded Trailer in Service of Boston & Maine Transportation Company

Report on Freight Trucking in New York

Examiner, in recommending that carriers be permitted to discontinue present practices, suggests plan for co-ordinated trucking services

ATTORNEY-Examiner Harry C. Ames, in his proposed report to the Interstate Commerce Commission on constructive and off-track stations on Manhattan Island, recommends that railroads serving New York be permitted to discontinue present constructive station services and to limit the practice of trucking in lieu of lighterage to interchange of traffic between connecting railroads and steamship lines, as proposed by these respondent carriers. In this connection the examiner holds that the commission is at present without authority to require carriers to equip themselves with highway vehicles to provide auxiliary trucking services.

The report further finds that unrestricted constructive station service and constructive deliveries through lighterage points under the trucking in lieu of lighterage tariffs "cannot be sanctioned because of their plain tendency to create violations of sections 2 or 3 of the act, and because said services, as now operated, are not compatible with the provisions of section 15a of the act." Finally, it is recommended that the constructive station now maintained by the New York, New Haven & Hartford, and which that road wishes to continue, should be discontinued because it is held to be in violation of section 2 of the act. As a corollary of this latter recommendation it was found that the proposal of the New York Central to continue its trucking in lieu of lighterage service on traffic to and from New England, in order to meet the competition of the New Haven's constructive station, should also be denied.

After making the foregoing findings on the issues of the case, Examiner Ames proceeds to "recommendations made with the view of affording a solution to the terminal problem on Manhattan Island and that the commission consider the propriety of making a request to Congress for amendatory legislation broadening its power to deal with questions affecting trucks and station facilities to be served thereby."

Examiner Suggests Solution

Elaborating upon the foregoing recommendation toward the close of his report, and after he has discussed his authorities for his findings on the issues of the case, Examiner Ames outlines his own suggestions for a solution of the New York terminal problem in the following manner:

These considerations of jurisdiction, coupled with the inclination of the carriers to oppose further truck co-ordination, would seem to conclude the matter. But it is not felt that it should be so concluded. As heretofore stated, the situation in New York harbor in respect of the delivery and receipt of freight is such that the wisdom of truck co-ordination plainly suggests itself. The carriers have recognized this fact for years. One of them is still openly in favor of it. Three others propose to continue it to and from inland stations. The testimony although not showing it directly, leaves the plain inference that the present attitude of the carriers is the outgrowth of a nasty competitive situation which has gotten beyond their control, and not because they feel that trucking service, if properly regulated and policed, is not desirable. It is humanly impossible to have sat through this hearing and through the hearing on a similar question at St. Louis, listening to the unfolding of the terminal problems of those two great shipping centers, without becoming deeply impressed with the tremendous advantages to be gained by carriers and shippers in a proper system of truck co-ordination. At St. Louis, some of the very carriers which desire to restrict the service at New York, are active supporters of a plan similar to that which the New York shippers seek to have installed. Thus we have the anomalous situation of three great railroad systems upholding and condemning similar services at opposite ends of their lines. It is not probable that these carriers, or any carriers, can, upon reflection fail to recognize the benefits to be gained from a properly regulated trucking service and with this thought in view the following suggestions are offered as a solution to the problem.

Pier Abandonment Must Be Gradual

We must start with the premise that the present method of pier-station delivery, being so long established, must be departed from by gradual stages. The maintenance of any scheme of delivery for more than 60 years might serve to make it antiquated, as suggested by some, but it also serves to make it an established form around which business has been built. A gradual change will also better enable the carriers to curtail their floating equipment by eliminating replacements. As soon as possible after the inland-station service is inaugurated some of the existing pier stations should be abandoned. And it is believed that this abandonment may be brought about with the least possible disturbance of existing conditions, if the carriers agree to the union or universal-station plan. A facility of this character offers a tremendous attraction to a shipper or receiver of freight, particularly in less-than-carload quantities, because it makes it unnecessary to "peddle" freight from one station to another where lots for different railroads move out or in on the same day. On the other hand, the drawing power of the individual inland station against the individual pier station is not nearly so great.

No difficulty should be encountered in respect of the segregation at and dispatch of freight from the inland station to the various roads. It should be possible at the outset to concentrate the freight for different roads at the inland station, and as business develops it should become possible to concentrate enough freight for a particular destination over a particular road, as is now done at the pier stations. The set up of cars on the Jersey side could easily be arranged to accommodate conditions at the inland stations. In other words the cars would simply be spotted and loaded on the Jersey side instead of alongside the piers, as at present. If the volume of tonnage handled through individual pier stations is great enough to warrant loading and immediate dispatch of a merchandise car to Pittsburgh, Pa., for example, there is no reason to believe that a similar arrangement could not be successfully operated from an inland station.

Bearing in mind the precaution that haste should be made slowly, it would be most unwise to attempt at the outset to operate too many inland stations. It would be well, at first, to establish a few of them at places conveniently located in districts which produce a heavy volume of tonnage. The number can best be determined by the carriers after a preliminary survey of traffic conditions. These stations could be made the basis of experimentation and, if conditions warrant, additional stations could later be located at other points.

In establishing these facilities care must be observed that the shipper on Manhattan is put in no more favorable position in relation to his traffic than are his competitors in other portions of the metropolitan district. In other words the station must approximate, as nearly as possible, the usual freight-station service accorded on less-than-carload business and the

team track on carload business. In either event the consignee must bear the expense of loading his vehicle from and to the platform.

Direct Delivery Allowance

Some arrangements should also be made to enable the consignee to take direct delivery if that service is desired. That is to say if a truck is loaded on the Jersey side and a consignee is willing to take delivery of it direct it would be absurd to require a flooring of the contents of the truck at the inland station. This contingency can easily be provided for by making two sets of allowances, the first to cover the cost of loading the trucks at Jersey City, haulage to the inland station and the platform costs, the latter to include, of course, the entire maintenance and operation of the inland station if it is operated by an outside party; and the second to cover only the haulage cost to the station. In the direct-delivery service the truckman should collect from the consignee the cost of loading the truck at Jersey City. This is in no sense a constructive-station service as that practice now prevails at Manhattan Island. It is merely a convenient method of avoiding a needless flooring of freight. The carriers should keep a supervisor on hand to check shipments which pass through the inland station without unloading and no allowance should be paid except on his authorization. The trucking charges beyond this point to consignees who desire to take direct delivery should be zoned according to locality. That is to say, a certain fixed charge may be made, for example, to consignees south of Fourteenth street, graded as the traffic moves farther north. The cost of loading the trucks should be added, of course, to each zone charge. The allowances should be arrived at after a careful cost study made in conjunction with a representative of this commission. Experience has shown that outbound shippers do not avail themselves of direct movement to any extent but if the service should develop similar arrangements should be made to accommodate it.

Patrons Should Have Latitude In Selection of Truckmen

The inland station may be operated either by the carriers themselves or by the truckman engaged to do the hauling. If the latter plan is to prevail, arrangements should be made whereby other truckmen may operate in direct-delivery service. In other words, this service being semi-carrier and semi-shipper, the latter should be given a reasonable latitude in selecting a truckman. Moreover, the allowance for direct delivery will be substantially less than that for station service and there would thus be no incentive on the part of any trucking company operating an inland station to encourage direct delivery. The privilege of hauling in direct delivery, however, should be limited to a reasonable number of truckmen.

It is believed that if the carriers make an honest effort to establish facilities of the character indicated they will ultimately succeed in materially reducing their terminal costs. This is indicated almost to the point of demonstration. The Pennsylvania made an estimate of its pier-station costs in respect of less-than-carload freight for the purpose of determining the advisability of shifting tonnage from certain piers to other piers. These costs ranged from $3.91 per ton at Pier 4, to $4.90 per ton at Pier 27, and averaged $4.57 per ton. Less-than-carload tonnage is handled through the present inland station of the Pennsylvania for $2.40 per ton, and there is every reason to believe that with greater concentration of tonnage this cost can be considerably reduced. Moreover, the direct-delivery allowance is bound to be considerably less. In every case presented to the commission in which the measure of rates to or from New York is in issue the carriers stress the high terminal costs at that point. With the way pointed to them to reduce these costs and at the same time provide a convenient and needed service to the shippers the logic of refusal is difficult to fathom. It seems high time that self interest should no longer be a stumbling block to self help. In most cities it is quite natural that carriers should prefer a policy of individualism in the matter of freight-station facilities. This because of their desire to afford individual improvements attractive to shippers or because through fortune or foresight they are in a little better position than their competitors in the matter of station location. But these considerations have no particular significance on Manhattan. All of the west-side lines operate pier stations which in form, at least, are substantially identical. Moreover, any improvements they might make would inure in the end to the city which owns them. It is true that the New York Central has on-line facilities in New York but that fact need not deter it from participation along with other lines in a universal station. The Pennsylvania had an on-line station at St. Louis but found it advisable to discontinue it and use the universal off-track stations. The problem will be best approached by a helpful spirit of co-operation, both among the carriers themselves, and between them, as a group, and the shipping public. The New Haven, which has withheld the establishment of inland stations pending the outcome of this case, may now take steps to establish one, keeping in mind the general principles here enunciated.

New York Situation Without Parallel

The report after its opening statement of the questions at issue continues to sketch the terminal handling of freight in New York harbor, which handling is held to present "a situation without parallel in the United States." The evolution of railway services to Manhattan Island from mainland terminals is outlined up to the time that the first car float made its appearance in 1866. These car float services, together with freight movement by lighter, continued unchanged in principle from the time of their establishment until 1921 when the Erie established the first constructive station on the west waterfront of Manhattan Island.

Here constructive and inland stations are defined as the report continues also to list the various other rail facilities such as pier stations and team tracks on Manhattan Island, in the Bronx, Brooklyn, Long Island City, Staten Island, Jersey City and other sections within the so-called free lighterage limits of New York harbor. "It will thus be seen" it adds, "that by means of car floats, lighterage service, or on-track facilities the entire harbor . . . is treated as one rate district. Manhattan is the only part of this district which has been accorded constructive station service, but all portions have been accorded the service of trucking in lieu of lighterage, which as practiced by some lines, as hereinafter explained, amounts to constructive station service."

Trucking in Lieu of Lighterage

In outlining the development of trucking in lieu of lighterage and the inauguration of constructive station services by the various carriers, Examiner Ames says:

Originally, trucking in lieu of lighterage was performed for the carriers strictly as an emergency or economical service. That is to say, when carload freight, entitled to free lighterage was on hand at the terminals, which required expedited movement to meet sailing connections or when it would be cheaper to have it trucked, the carrier at its own option would arrange for the trucking. As thus conducted, the shipping public has no particular interest in it because it is merely a mechanical substitute for lighterage service. Lightered freight is, of course, delivered alongside piers or steamships, and trucks, substituted for lighterage under the original scheme would make similar deliveries. It was not until 1926 that the service expanded to its present form. At that time the New York Central began to feel the competition of the constructive station and, in order to meet it, it conceived the idea of allowing truckmen performing trucking in lieu of lighterage to merely touch or pass by the lighterage point nearest and enroute to the consignee and continue on under load to the consignee's door. It pays allowances ranging from 8.5 cents to all Manhattan lighterage points, to 15 cents to some points in the outlying lighterage limits of New York harbor. This allowance covers the service between rail head and lighterage point and for the service beyond the truckmen collects charges from the shippers. Responsibility also divides at the lighterage point. It will be seen, therefore, that in practical effect the service is exactly the same as that accorded through constructive stations. It employed 34 truckmen who immediately became active solicitors for the New York Central. Although the optional feature of the service was and is provided for, as usual, in the tariffs no instance is referred to of record where any consignee or consignor desiring the service was refused it. On the contrary, the service was and is actively solicited and is a very potent factor in diverting tonnage from other lines. Later, the Jersey Central and the Baltimore & Ohio, to meet this competition, made similar arrangements with truckmen. The other lines, thus far, have refrained from doing so and in the schedules under suspension all of the lines agree to restrict the practices strictly to freight interchanged with railroad or steamship lines. (The New York Central, however, proposes

to continue constructive-lighterage service in respect of traffic to and from New England in order to meet the competition of the New Haven.) For brevity, this character of service will be referred to as constructive lighterage.

Development of Constructive Stations

The Erie, the first railroad to establish constructive stations on Manhattan Island, took that action November 10, 1921. On the same date it established inland stations known as Beach Street, Greenwich Street and Washington Street stations. In *Tariffs Embracing Motor-Truck or Wagon Transfer Service*, 91 I. C. C. 539, 542, the commission in speaking of this service of the Erie said:

> At New York the Erie has adopted a system similar to that at St. Louis, embodying most of its important features. This service was made necessary by the great congestion and lack of adequate terminal facilities at that point. . . . Three 'inland' stations, similar to the 'off-track' stations at St. Louis, are maintained by the truck company and the usual services connected with the receipt and delivery of freight are similarly performed. Provision is also made for direct service to and from the store door of the shipper by the use of a constructive station on the Manhattan side of the Hudson River. The record shows that this service is desired by and beneficial to shippers and that other carriers serving New York are contemplating the establishment of similar services.

It will be observed that the Erie inaugurated the service because of "great congestion and lack of adequate terminal facilities."

The next railroad to adopt the service was the Lehigh Valley on December 29, 1924. On September 1, 1925, this line also established inland stations known as "Washington Street," "Beach Street" and "Laight Street." Like the Erie, it employed the United States Trucking Corporation as its exclusive agent for both services. A witness for the Lehigh Valley testified that competition was the sole reason for establishment of these services and that the step was taken only when it found it was losing traffic to the Erie.

The Delaware, Lackawanna & Western established its constructive stations on April 1, 1925, to meet the competition of the Lehigh Valley and the Erie.

The New York, New Haven & Hartford, which has its freight terminals in the Bronx, established a constructive station at 59th Street on September 18, 1926, which station is served from its Harlem River yards at 132nd Street. This carrier established the service as an economic measure and because it hoped eventually to develop it to an extent which would permit the elimination of the more expensive pier service. It is not proposing, as are all the others, to discontinue the service.

The Baltimore & Ohio established its constructive stations on March 1, 1927, partly because of the competition of other lines and partly because of a desire to experiment with it.

The constructive stations of the Pennsylvania were established on June 1, 1927, primarily because of an anticipated increase in fruit tonnage necessitating enlargement and rearrangement of pier stations and a desire to divert some of the merchandise traffic from the piers due to the inadequacy of those stations to handle both classes of traffic. It also established inland stations at Laight and West streets and at Watts and Washington streets, and employed the United States Trucking Corporation as its exclusive agent for both services. On June 15, 1927, the Central Railroad of New Jersey inaugurated its constructive-station service, solely as a competitive measure.

We thus have three railroads establishing constructive-station service as a step toward economy and efficiency, three establishing it solely for competitive reasons, and one on account of a mixed desire to compete and experiment.

Constructive Station Tonnage Small

Figures gleaned from exhibits, filed by the carriers, to show the small proportion of their respective total tonnages which sought the constructive station are next tabulated. This tabulation is as follows:

	Tons Handled					
	1925		1926		1927	
Railroad	Constructive Stations	Others	Constructive Stations	Others	Constructive Stations	Others
Erie [1]	46,298	835,103	44,250	938,532	42,673	884,940
Lehigh Valley [2]	5,504	777,532	13,283	783,412	20,096	739,645
New Haven [3]		829,235	29,276 [9]	732,713	132,226	563,638
Pennsylvania [4]		1,092,116		1,121,085	18,397 [10]	1,030,443
Jersey Central [5]		552,728		449,463	15,507 [10]	432,597
Lackawanna [6]	12,351 [8]	527,866	24,589	529,776	34,189	487,672
Baltimore & Ohio [7]		508,199		518,822	47,195 [11]	501,087

[1] Includes in "others" pier stations at Duane Street, 28th Street, and 149th Street, North River, and pier 7, East River, also inland stations on Greenwich and Leroy Streets.
[2] Includes in "others" piers 8, 34 and 66, North River, West 27th St. yard, and East 124th Street, East River, also inland stations on Beach Street and Laight Street.
[3] Includes in "others" piers 37 and 70, East River.
[4] Includes in "others" piers 2, 22, and 37th Street, North River, and 125th Street, East River, also inland stations on Laight Street and Watts Street. (Does not include perishable freight handled at pier 28.)
[5] Includes in "others" piers 10, 39 and 80, North River, and 3 months' operation in 1925 of pier 46, North River.
[6] Includes in "others" piers 13, 41 and 68, East River, and pier 26, East River.
[7] Includes in "others" pier 22, North River, pier 21, East River, and West 26th Street team tracks, North River.
[8] Established April 1, 1925.
[9] Established September 18, 1926.
[10] Established June 15, 1927.
[11] Established March 1, 1927.

In discussing the foregoing figures the examiner calls attention to the very low percentage of the total traffic which has sought constructive stations. "Moreover," he continues, "the inbound tonnage forms substantially the entire movement. For example, of the Erie total of 46,298 tons in 1925, only 3,605 tons moved outbound. In 1927, the Pennsylvania handled no outbound tonnage through its constructive station. This lack of balance in directional movement is certain to produce high trucking costs. The dearth of tonnage, also, has failed to produce expected economies at pier stations. There is no question that if the total tonnage at the piers could be handled through constructive stations and the piers abandoned economies would result. But when the constructive station tonnage does not reach a point where the piers or any of them, can be abandoned, the result is a diversion from the piers to an alternative service, and an increase in unit costs at the piers."

Rumors of Manipulated Charges

Commenting upon testimony of several railway witnesses regarding rumors of manipulated trucking charges for the haul beyond the constructive station or lighterage point to the consignee's place of business, the report finds that although witnesses were careful to assert that so far as their particular lines were concerned the rumors could not be verified, the persistence of these reports nevertheless apparently caused in 1927 the insertion, in carrier contracts with truckmen, of a provision for minimum trucking charges beyond constructive stations. "For some curious reason, not explained of record," it continues "a similar provision was not made in the contracts covering constructive lighterage. As a consequence truckmen operating for those carriers which permit the lighterage points to be made constructive stations are in position to, and do, make charges to consignees below the minimum provided for constructive stations proper. This, of course, creates an unbalanced competitive situation and the lines which adopted the so-called constructive lighterage profit accordingly. It is this latter practice which has made carriers fear that the ultimate result of these trucking practices will be store-door delivery at or near the New York rate. They concede that no shipper or organization of shippers has ever requested such a concession. But they fear that the habit of receiving freight under the constructive lighterage plan at little or no cartage cost over the New York rate will grow to such an extent that it will be eventually demanded as a right."

Patrons Should Pay Proper Charge for Store-Door Service

Dispelling this expressed fear of the carriers the examiner declares, "A proper cartage charge or a proper share of cartage expense in any scheme of store-door delivery is properly to be borne by the consignee. Nothing can be demanded as a right which is grounded on the false premise that the shipper has, by habit or otherwise, borne less than his proper share of such expense."

In discussing testimony of Pennsylvania and Central of New Jersey witnesses on the greater delay to equip-

ment on the Jersey side under the constructive station plan than under the pier station service and the doubt as to the application of demurrage rules to these shipments which are in the custody of the carrier until the constructive station point is passed, the report states "There may be some doubt as the tariffs are now published. But certainly if the constructive station service, or any similar plan is to be retained, the tariffs could and should be amended so as to remove the doubt. The theory of demurrage is that a consignee should pay for the detention of a loaded car due to and during the period of his inability to receive its contents. And this is true whether he is receiving delivery through a constructive station or through a regular station."

Positions of Protestants

Following this outline of the carrier positions the report continues to say that the statements of the various protestants "show both the enormity and complexity of the problem and also serve to demonstrate that the conflicting ideas make it virtually impossible to combine them into any one concrete solution which might be impressed with that somewhat vague quality—public interest. Some of the parties, agreed on certain principles, are wholly in disagreement as to the application of them. Sectional feeling, not only between New Jersey and New York, but among the different boroughs of New York, crops out. Each locality has a solution, but each makes itself the paramount consideration. This is not so much selfishness as it is self preservation. But consideration of these conflicting opinions only serves to show that any solution looking to genuine public interest must be well impressed with a give-and-take spirit. And this is true, not only of the shippers, but of the carriers as well."

The position of each protestant is now briefly sketched, these participants being: the Port of New York Authority, which is interested in the so-called statutory plan for Manhattan, involving off-track union station development; the Merchants Association of New York which advocated store-door delivery but, in lieu thereof, favored continuance of constructive station services; the Brooklyn Chamber of Commerce which proposed the extension of constructive station service to Brooklyn if it were retained on Manhattan; the Chamber of Commerce of the Borough of Queens which like Brooklyn, intervened to protect its shippers from any disadvantage in service or expense in comparison with competitors in the harbor district; the Board of Commerce and Navigation of the State of New Jersey which made no objection to the trucking service on Manhattan, provided the cost of the service is added to the New York rate or that the service be thrown open to New Jersey shippers "when and as required"; the Warehousemen's Association of the Port of New York which was described as a party "amicus curiae," favoring continuance of free lighterage, condemning the substitute trucking service of the New York Central, Central of New Jersey and Baltimore & Ohio and opposing the establishment of any service which will jeopardize the contract terminals in Brooklyn; the Publishers Association of New York City which took the position that the commission has complete jurisdiction in the matter of terminal trucking, that there is nothing inherently unlawful in the constructive station plan and that the commission should require the continuance of these trucking services; the Terminal Truckmen's Conference of New York which is composed of railway contract truckmen and which favored a continuance of the existing trucking services; the Brooklyn Contract Terminals which took the position that the constructive station and constructive lighterage services should be discontinued on the ground that the continuance of these practices would jeopardize their existence; the Merchants Truckmen's Bureau of New York which would substitute for existing trucking practices a plan whereby any consignee who so desired could take delivery in Jersey City and receive a railway allowance for the haul to New York.

Adequacy of Facilities

Examiner Ames in opening his arguments on the issues first considers the question of whether the terminal facilities which will be provided for Manhattan Island if the constructive station and constructive lighterage services are discontinued will be in accord with that provision of the Interstate Commerce Act which lays upon the carriers the duty upon reasonable request to provide and furnish transportation as defined in the Act. In this connection he says:

The capacity of freight stations is, of course, one of the first matters to consider on the question of adequacy. The record leaves no doubt that from this standpoint alone the pier stations will be adequate to accommodate the tonnage now moving through the constructive stations.

The New Haven has handled the greatest amount of tonnage through its constructive station, 132,226 tons in 1927, as against an average of 29,676 tons for the six other lines. It is significant, in this connection that the New Haven is an enthusiastic advocate of the service and desires to continue it. But whether the lack of development in respect of the other lines is due to apathy in solicitation, or other causes, the fact remains that the percentage handled of the total tonnage is so small that it must be concluded that it could be accommodated at the pier stations.

But the reasonableness or adequacy of terminal facilities is not necessarily controlled by their physical capacity to accommodate the tonnage offered. The question is, rather, whether the facilities are all that might reasonably be required having in mind the peculiar circumstances and conditions of the traffic. By this it is not to be implied that carriers are bound to change their methods of delivery to meet individual or group ideas of perfection. But if all of the circumstances reasonably point to the advisability of some change or improvement, the commission should not allow the fact that there is floor space enough to handle freight at existing facilities to deter it from suggesting or, if within its power, requiring a change. The Manhattan situation is peculiar. Offering a reservoir of tonnage, probably not exceeded by any section in the world of the same area, its isolation by the very waters which originally made and have continued to make it a leading port, now presents a problem which the rail lines terminating in New Jersey must solve in order to share in its tonnage. They must adopt extraordinary measures in extending their service to this island. For 62 years they have made this extension by means of the car float and lighter, supplemented by pier stations and a few team-track locations. It will be difficult, if not impracticable, to enlarge these team-track facilities. Cost of land for this sort of facility is prohibitive. And when it is remembered that the business district of Manhattan reaches to the water's edge, the idea of further supplementing track layouts is not conducive to proper civic development. Access to team tracks must be had by rights of way which cross crowded city streets paralleling the water front.

Occupancy of Piers

Pier space is rented from the city government. It is exceedingly valuable and is much sought after. At present the railroads occupy about one-third of the total pier space available. Under the Statutory Plan of the Port of New York Authority, it is desired that much of this railroad pier space be released for steamship occupancy. The downtown Manhattan waterfront, convenient as it is to the financial, hotel and theatrical districts forms a highly desirable location for steamship piers, especially those of the transatlantic lines.

The pier station, as now operated, has its disadvantages both from the carrier and shipper standpoint. It casts one burden upon the carrier which it is not compelled to bear at the ordinary station, i.e., the unloading of car-load freight. It would not be practicable for the carrier to allow shippers to unload freight from cars on floats and the shipper receives his freight from the floor of the pier. This requires a vertical lift from the pier floor and makes the process of loading trucks more difficult and expensive than is the case at the usual team track where the car floor and truck floor are on a level. The

shipper's truck is driven on the pier for the purpose of receiving inbound freight. This is conducive to congestion on the piers when a number of trucks are on hand and loading. . . .

Pier Loaders Condemned

Another condition prevails at pier stations which requires special comment. It has been pointed out that the consignee's vehicle must go on the piers to receive his freight. Theoretically he is permitted to load his own vehicle. But actually he is prevented from doing so by a band of individuals self-styled as public loaders. These men have an organization of some sort which has affiliation with the International Longshoreman's Association, which in turn is affiliated with the Teamsters Union. By means of this relation they are in position to and do force their presence on the piers, and partly because of the same affiliation but principally by physical prowess and intimidation they force their employment by the shipping public. In any event they infest the pier stations and, although witnesses for each railroad disavowed railroad authorization for their presence on the piers they admitted that they were a "necessary evil" and that to eject them would in all probability cause a strike and a tie-up of the harbor. From testimony of record they are wholly without principle in their dealings with the public. They will load that freight which can be handled quickly and with profit in preference to other freight, and will leave the truck of a customer with whom they deal on credit, to load for one who offers cash. In short, so far as the matter of loading is concerned, they are autocrats of the piers and the capacity of the piers to handle business is virtually in the hands of these men. No one cares to offend them, whether it be the railroad, the teamster, or the shipper. To illustrate the extreme caution prevalent in this respect, a witness for a large trucking company was asked the direct question whether it was sometimes necessary to bribe these men to get prompt service. He replied:

"I do not like that term—We make them presents, yes."

Of course, it may be urged that inasmuch as the consignees are compelled by necessity to receive their freight from pier facilities, it is better to have the truck loaded by labor experienced in that respect. That might be true if these loaders were employed by and answerable to responsible authority. The result of the present practice is that a tribute is levied against Manhattan shippers in receiving their freight. The practice cannot be too strongly condemned, and the pier stations should be immediately cleared of this class of labor.

Congestion of Pier Approaches

The street approach to all of the North River piers is along West street. This street has been widened to such an extent in recent years as to make it difficult to conceive of any undue street congestion. But the necessity of operating trucks on the piers, their turn around, and the loading difficulties described, make congestion very likely on the piers. The matter of theft and pilferage is also a serious consideration in the operation of pier stations. Respondents concede that the losses from these sources are considerable.

Individuals and organizations who have studied the terminal problem in New York Harbor have long felt that truck co-ordination is a necessary step in bringing about a permanent solution. In fact, compulsory store-door delivery was recommended by former Commissioner Harlan in 1918. One witness, long experienced in the delivery problems of New York, expressed the view that if the late war had lasted 30 days longer, store-door delivery in New York would have been an actuality. The railroads, themselves, have given the matter of trucking service in New York harbor serious consideration for some years. . . . As pointed out, the constructive-station service was first established by the Erie in 1921 partly as an economical measure and the same reasons prompted the Pennsylvania to establish the service in 1927. The carriers now take the position, of course, that the failure of the service to live up to expectations, among other things, has made it uneconomical and they desire to abandon it. The Manhattan protestants regard this as a backward step and vigorously oppose it. They see in it a return to the methods of 1866 without hope of ever witnessing any progress in terminal development.

Truck and Pier Service Compared

Let us compare a typical truck operation on a carload of freight over one of the west-side lines, destined to a consignee on Manhattan, with the movement of a similar carload through a pier station. In the truck-movement, the loaded car is spotted at a team track in Jersey City. The truck is loaded directly from the car and proceeds to the ferry, ordinarily not more than ¼ mile distant, and is ferried to the New York shore. Without unloading, or other interruption it moves to the consignee's place of business or to the inland station. In the pier-station service, the car is first switched from the classification yard to the float bridge where it is shunted on to the car float. The car float is then towed across the river by a tug and spotted alongside the pier station. The car is unloaded to the floor of the pier by railroad labor. Later the consignee calls, his truck is loaded by the so-called public loaders and the freight is taken to his place of business. The float movement not only entails a double handling of the freight but requires a substantial investment in floating facilities.

Under all of these circumstances can it be fairly said that the respondents should abandon all forms of truck co-ordination, except that used by the three lines maintaining inland stations, and that in respect of interchange freight? To answer affirmatively would be to concede that the pier stations leave nothing to be desired in the matter of terminal facilities and that the use of trucks in terminal service is not a step of progress. The record is convincing that the carriers should make every effort to avail themselves of truck transportation and co-ordination on Manhattan Island to the end that the expensive pier stations may gradually be discontinued.

Constructive Station Principle Sound

Discussing the means of bringing about the foregoing objective of pier station abandonment the report turns to the constructive station and finds, "There is no question that the service considered entirely by itself and as a convenient means of completing a tariff obligation to deliver freight at a point beyond the physical rails of the carrier, is both expeditious and economical. It is the competitive situation which results from it that may lead to a vicious circle. In other words, the principle of constructive station service is sound, but the competitive conditions growing out of it are the root of any unlawfulness which may result, and it is these competitive conditions which, in the final analysis must be the foundation of commission approval or disapproval in a given case."

Here is included a discussion of the aforementioned competitive conditions first from the standpoint of the shippers in which connection it is found that "any saving or advantage which Manhattan shippers receive in the way of cartage expense operates to the relative disadvantage of their competitors who pay like rates and normal cartage. . . . Nor could the claim of these other communities be denied on the ground that the carriers, not being able to reach New York with their rails, must provide some means of servicing it and can, therefore, resort to trucks. It is well settled that the carriers have long since extended their rails to New York by means of car floats. . . . The constructive station on Manhattan, therefore, is an added facility which, if of advantage to Manhattan shippers, may be rightfully demanded by competing shippers in the rate district. It will, of course, be immediately urged that if the construction-station is correct in principle, its spread to other localities should not be a bar to its adoption. But, it must be borne in mind that in many localities, already adequately served by on-track facilities, it might result in an unwarranted duplication of delivery facilities."

Competitive Situation Makes Present Constructive Service Unworkable

The consideration of constructive station service from the carrier standpoint discusses the competitive situation at length and concludes with: "It is enough to say that the constructive station service as now operated on Manhattan Island, and the constructive-lighterage service, inaugurated by the New York Central, in an effort to meet the competition created by the former, can not be approved because of their plain tendency to create violations of sections 2 and 3 of the act, and because the competition and reprisals which they have engendered among the carriers have and would continue to produce results hostile to the requirement that rate structures should be

based upon "honest, efficient and economical management." Stated with the utmost candor, the competitive situation in the New York harbor district, both as affecting carriers and shippers, is such that the construction station, as such, will not work.

The contention of the New Haven that its constructive station at 59th Street should be continued is disposed of as follows:

The New Haven is the only carrier serving New York which is making a real effort to continue trucking as an auxiliary to rail transportation. It feels that the service will ultimately result in real economy and permit the abandonment of the more expensive pier-station service. For this reason it is perhaps unfortunate that its physical situation presents what seems to be an insurmountable legal objection to the facility. Its approach to the station from its Harlem River yard is not over water or through territory at which no shippers are located. Moreover it is under no legal obligation to deliver freight at Fifty-ninth street any more so than at any other particular street in New York. It has made an honest and commendable effort to locate the facility so that it will operate fairly and without discrimination. But the fact can not be explained away that it pays the cartage to Fifty-ninth street for consignees located south of that street, whereas consignees located north thereof and intermediate to Fifty-ninth street are compelled to pay their own cartage from 132nd street. This is clearly an unjust discrimination. . . .

Store-Door Delivery

Store-door delivery is next discussed, in which connection the proposal of the Merchants' Association of New York for store-door delivery on carload freight only is treated. After discussing the legal questions this section of the report concludes as follows:

From an examination of the authorities it must be concluded that a carrier cannot be required against its wishes to furnish personal or store-door delivery of freight. . . . It may be, . . . that the time will come when store-door delivery will be accepted by carriers and shippers as the logical solution of terminal problems. Learned and experienced minds have recognized tremendous advantages and possibilities in the service, and the various treatments of the subject, coming as they do from responsible organizations command respect. But that change, under the present state of the law, will have to come with carrier cooperation and can not come with carrier opposition. On the compass of this record the subject must be dropped from consideration.

Inland Stations

That portion of the report dealing with inland stations discusses mainly the power of the commission to require carriers, not now operating and not wishing to operate these off-track facilities, to do so. Likewise here is treated the position of the Port of New York Authority in relation to the establishment of inland union stations. Citations of authorities from previous commission and court decisions on these questions comprise much of this discussion which reaches the following conclusion:

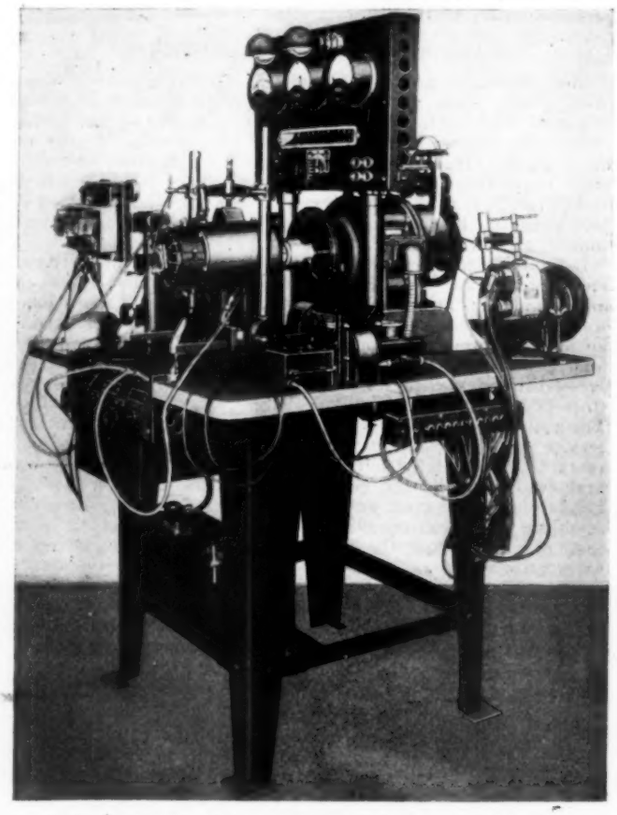
It is manifest that the paramount duty laid upon carriers . . . is to refrain from discrimination or undue prejudice in their treatment of connecting lines. Certainly it would require a strained construction to conclude that it imposed any duty in respect of universal or union-station facilities for the receipt and delivery of freight. The "reasonable, proper, and equal facilities" to be provided are those for the interchange, receiving, forwarding, and delivering of property. A union or universal station could not be contemplated by the term "Interchange" because that is an operation which takes place while goods are still in transit and in the possession of the carriers, and for the further reason that the interchange provided for is "between their respective lines." Nor could the terms "receiving" and "delivering" as used in that section contemplate a union or universal station because the "receiving" and "delivering" provided for is "to and from their several lines" and not to and from consignees or consignors. The statute plainly contemplates discrimination as between carriers and it was so interpreted in the earliest decision upon it. . . . By this, it is not to be assumed that the rights or convenience of shippers as a result of the operations referred to in the paragraph may not be collaterally involved, but the major right to be asserted under the paragraph is that of one carrier in relation with another or other carriers. In the absence of direct statutory authority it must be concluded that the commission is without power to require carriers against their wishes to provide and maintain union or universal freight stations. It is, therefore, unnecessary to pass upon the third major question, viz., whether they could be required to use the station facilities of another party.

Heavy-Duty Test Bench for Electrical Equipment

A TEST bench, incorporating apparatus for testing all electrical equipment used on motor vehicles and of such capacity as to meet all the requirements of large bus units, is now being manufactured by the Burton & Rogers Manufacturing Company, Boston, Mass. It is being distributed to the railroads by the National Railway Appliance Company, New York, N. Y.

The bench is equipped with a 3½ hp. variable speed main driving motor, an adjustable vise for holding all types of generators to be tested, a rotary spark gap, a magneto testing fixture, a growler, a voltage regulator testing bracket, a tool for turning and undercutting commutators, a coil testing bracket, attachment for making starter torque tests, a control panel and an instrument panel on which are mounted a voltmeter, ammeter, an electrical tachometer, switches and an adjustable 12-point spark gap.

The main driving motor is of the reversible brush shifting type and has a speed range of from 100 to 4000 r.p.m. It has sufficient power for a complete driving test over all speed ranges for any type of bus generator



The Bench is Designed for Convenience and Ample Capacity

up to 1000 watts. The generator under test is held in the vice directly in line with the driving motor, and attachments are provided for the straight line drive of any type of generator. An adjustable carbon rheostat is used in the generator charging circuit to duplicate the varying lamp load conditions found in operating practice.

The voltage regulator bracket will mount all types of regulators. It is so constructed that the voltage regulator can be held in a horizontal position when it is necessary to make adjustments and be quickly turned to the vertical position for testing without disconnecting any leads.

The vise for holding magnetos is provided with speed adjusting pulleys and 12 built-in, high tension leads. The magnetos under test can be driven at any desired speed down to 20 r.p.m.

A coil testing bracket is furnished, equipped with an attachment for testing magneto armatures. A set of breaker points is built in for duplicating car operating conditions when making coil tests. A condenser is also built in this same circuit and can be used or not at the option of the operator according to the style of coil to be tested. Separate condenser tests are provided for by substitution of outside condensers for the panel condenser. A resistance is also furnished in the coil circuit to control battery voltage while the coils are being tested.

Leads for all tests, except the high tension leads, are terminated in the terminal panel which is constructed in the front of the bench just under the holding vise. With this construction, possibility of leads being tangled up in moving parts is eliminated. The following leads are found on the terminal panel: Positive and negative starter test leads through 800-ampere shunt to ammeter; positive and negative coil testing leads to breaker and condenser; positive and negative battery leads through 40-ampere shunt to ammeter; positive and negative voltmeter leads direct to voltmeter; positive and negative 80-ampere leads through adjustable rheostat to ammeter; switch controlling battery current and switch for cutting in or out the condenser. The starter and carbon resistance leads are screw type, while on the other lighter leads "rajah" connectors are used. The control knobs for coil and generator rheostats and the control for adjusting the speed of the driving motor are also located on this terminal or control panel.

A nine-inch rotary spark gap is furnished for making operating tests on distributors. This gap has an adjustable setting for its zero. It is also equipped with an additional scale over one-quarter the circumference that reads twice the distributor degrees. The bench is also equipped with a distributor holding attachment to the vise making it possible to drive any type of distributor.

The armature reconditioning tool driven from the main driving motor will handle all types of armatures and can be used for turning down the commutator and undercutting the mica. A scroll chuck and steady rest are supplied for handling centerless armatures.

A torque arm and spring balance are used for testing starting motors, the current for this operation being supplied from the battery.

The growler has a double winding, is equipped with test prods, a meter for recording the flow of current in the windings of the armature and a double-pole, double-throw switch. The double winding makes it possible to test starting motor armatures, as well as generator armatures.

Motor Transport News

THE CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC has applied to the Iowa Board of Railroad Commissioners for authority to operate a motor coach line for the transportation of passengers, mail, baggage and express between Storm Lake, Iowa, and Rockwell City.

ACCORDING TO PRESS REPORTS, the Union Pacific will soon begin the operation of motor coach lines radiating from a new passenger station at East Los Angeles, Cal. These motor coach routes will extend from East Los Angeles to East San Pedro, to Pasadena and to Anaheim.

THE SOUTHERN PACIFIC MOTOR TRANSPORT COMPANY on November 29 began the operation of a tri-weekly service between Los Angeles, Cal., and El Paso, Tex., via Tucson, Ariz., and Phoenix. The length of this route is 1,015 miles. The motor coaches leave Los Angeles and El Paso on Tuesdays, Thursdays and Saturdays.

THE CENTRAL OF GEORGIA MOTOR TRANSPORT COMPANY has been granted permission by the Alabama Public Service Commission to substitute motor coach service for train service between Opelika, Ala., and Roanoke, a distance of 38 miles, and between Eufala and Ozark, a distance of 59 miles. The motor coaches will replace two of the four daily trains operated on each line.

THE DENVER & RIO GRANDE WESTERN has applied to the Utah Public Utilities Commission for permission to curtail certain train service on its Marysvale, Utah branch and the Rio Grande Motorway of Utah, Inc., a Denver & Rio Grande Western subsidiary, has applied for permission to operate motor coach and motor truck passenger and freight service between Salt Lake City and Marysvale, and between Manti and Marysvale.

THE NORTHLAND TRANSPORTATION COMPANY, subsidiary of the Great Northern, has begun the operation of a motor truck for the transportation of l.c.l. freight between Calumet, Minn., and Grand Rapids, in replacement of certain discontinued train service. The truck consists of a motor coach chassis upon which a large body was installed by the mechanical department of the Great Northern. Leaving Calumet at 9:20 a. m., the truck stops at Marble, Holman Junction, Taconite Junction, Bovey and Coleraine, and arrives at Grand Rapids at 11 a. m. On the return trip, it leaves Grand Rapids at 12:40 p. m., makes stops at the same stations and arrives at Calumet at 1:55 p. m.

THROUGH EXPRESS SERVICE, co-ordinating rail and highway movement of goods, has recently been established by the National Railways of Mexico between Mexico City and Acapulco on the country's west coast, according to reports made public by the United States Department of Commerce. The rail movement is from Mexico City to Iguala, State of Guerrero, while the merchandise is transported by motor truck from this latter point to Acapulco over the new Acapulco highway.

BECAUSE OF LOSSES sustained in operating passenger trains, the California Railroad Commission has granted authority to the Southern Pacific to discontinue two passenger trains between Vallejo, Cal., and Santa Rosa. These trains will be replaced by motor coaches operated by the Southern Pacific Motor Transport Company. The Southern Pacific has before the railroad commission a number of similar applications. In a recent decision the commission authorized the substitution of motor coaches for 20 non-profitable trains on the Monterey peninsula.

California Commission Refuses to Open S. P. Case

The California Railroad Commission has denied the application of several independent motor coach operators in the state of California for a rehearing on its recent order permitting the Southern Pacific to abandon certain steam passenger service on several of its branch lines in the Santa Cruz-Monterey

territory and to substitute motor coach service operated by the Southern Pacific Motor Transport Company. The independent companies contended that the district is adequately served by existing motor coach lines, and the action of the commission in granting the application of the Southern Pacific is equivalent to allowing entrance of competition into a field fully developed and adequately protected. As in its previous order, the railroad commission rejected this contention, together with several others of supplementary nature. Motor coach operation by railways is held to be nothing more nor less than a substitution of existing service.

B. & O. Motor Coach Service to Begin January 1

The West Virginia Transportation Company, highway subsidiary of the Baltimore & Ohio, will begin operations with a fleet of seven motor coaches on January 1 between Weston, W. Va., and Buckhannon, Clarksburg and Grafton and Parkersburg and Cairo.

Joseph Z. Terrell has been appointed manager of the new company and began his new duties December 16, with headquarters at Clarksburg, W. Va. Mr. Terrell was at one time agent at Romney and Keyser for the Baltimore and Ohio Railroad and later warden of the State Penitentiary at Moundsville.

The new service will be co-ordinated with the schedules of Baltimore & Ohio passenger trains and will provide greater frequency in service in the territory affected.

The terminals of the new motor coach routes will be in stations of the railroad in the cities mentioned, affording waiting rooms and ticket offices, as well as baggage and parcel checking facilities.

The new motor coaches are of the parlor car type, with provision for stowing luggage. They will be painted a deep maroon with black belt rail and fenders. The name of the West Virginia Transportation Company will appear on the belt rails of the coaches and on the center side panels the Capitol Dome emblem of the Baltimore & Ohio, both in gilt lettering. Drivers will be in uniforms of military type.

Similar motor coach transportation service is under consideration over other roads contiguous to the Baltimore & Ohio lines in West Virginia.

States Railroad Position Regarding Motor Coaches

In justification of the Southern Pacific's proposal to substitute railroad operated motor coaches for branch line trains that no longer pay operating expenses, Henry W. Hobbs, attorney for the railroad, replied recently to an open letter broadcast throughout the state of California by the California Transit Company. If railroads were to cease operation for one week, Mr. Hobbs said, industry would come to a standstill and the nation would face a famine; but the stoppage of all motor coach and truck lines in the country would have little or no effect upon the wellbeing and prosperity of the public. For this reason, he insisted, the railroads, being necessary in the public interest, are entitled to protection as well as regulation by the public service commissions.

"In the transportation of passengers and express," said Mr. Hobbs, "railroads necessarily have a heavy investment in fixed property. They maintain their own roadbed, are compelled by law to meet costly safety requirements, and in California pay seven per cent of their gross receipts in taxes. Motor coach companies have no investment in roadway or other fixed property; they do not have to maintain their own roadbed; they have no costly safety requirements to meet, such as 'full crew' laws, block signals, etc.; and they pay only 4¼ per cent of their gross receipts in taxes. Yet they have been generally permitted to enter the field of transporting persons and property in competition with the railroads."

The highway motor coach service which the Southern Pacific proposes to operate in California will be confined, Mr. Hobbs pointed out, to feeder service connected with main line trains at junction points, or local service along the main rail lines in lieu of local trains. This, Mr. Hobbs said, referring specifically to one of the charges of the California Transit Company, hardly could be called "a 'preconceived design' to dominate the motor coach field which now extends throughout the length and breadth of California, and interstate."

The California Transit Company in its open letter declared that economies in public utility operation are not of public concern. Mr. Hobbs quoted from the Public Utilities Act to show that the state railroad commission is particularly enjoined to promote economies. Mr. Hobbs concluded by declaring that, in spite of the fact that the railroads are now required to make elaborate and costly showings in support of applications to substitute cheaper forms of transportation for trains that are not sufficiently patronized to pay operating costs, the railroads will continue to do so.

"It is not in the public interest," Mr. Hobbs said, "for the railroads to withdraw from the field in favor of a competitor who does not and cannot render to the public the same full and complete service it has heretofore enjoyed."

Joint Truck Rates Authorized in Minnesota

An order permitting the truck lines in the state to make a joint through rate of 90 per cent of the sum of the local rates for the movement of l.c.l. freight traffic participated in by two or more common carrier freight truck lines has been issued by the Minnesota Railroad & Warehouse Commission. This order affects 27 truck lines directly in addition to three lines which were permitted to make joint rates under a previous order. The railroads opposed the joint rate schedule for the truck lines, contending that such a schedule could not legally be ordered by the commission unless truck operators made a showing of public convenience and necessity for operation, not only between all points on each line, but between every point on each line and every point on all other lines.

In reply to this contention, the commission's order said: "Public convenience and necessity having been found by the commission, and certificates of public convenience and necessity having been issued on such findings, we are of the opinion that further proof of public convenience and necessity is not necessary in support of an application to approve and authorize joint rates. On full consideration of the tariff before us, we do not believe the approval and authorization of these proposed joint rates will seriously affect competing rail carriers. We are also of the opinion that the proposed rates are just, reasonable and non-discriminatory."

It is understood that the new joint rate schedule in many instances will enable shippers to move through l.c.l. shipments over two or more truck lines within the state of Minnesota at less cost than they could ship them between the same points by rail. This is said to be particularly true in territory northwest of the Twin Cities, affected by the so-called "Fargo freight rate decision."

Orders for Equipment

THE SOUTHERN PACIFIC MOTOR TRANSPORT COMPANY has placed an order with the General Motors Truck Company, Pontiac, Mich., for an additional Type-W Yellow coach.

THE UNION PACIFIC STAGES, INC., has ordered a Type-Y parlor motor coach from the General Motors Truck Company, Pontiac, Mich.

THE CENTRAL OF GEORGIA MOTOR TRANSPORT COMPANY has ordered a Type-Y Yellow coach from the General Motors Truck Company, Pontiac, Mich.

THE WESTERN SLOPE MOTORWAY, INC., subsidiary of the Denver & Rio Grande Western, has accepted delivery of a Mack 6-cylinder 29-passenger motor coach, with a suburban-type body.

THE SOUTHWESTERN TRANSPORTATION COMPANY, subsidiary of the St. Louis Southwestern, has ordered four Type-W Yellow coaches from the General Motors Truck Company, Pontiac, Mich.

Among the Manufacturers

Rudd H. Bender, formerly associated with the Brown Body Company, has joined the sales staff of the **Bender Body Company**, Cleveland, O.

Elmer G. Knox, factory and production manager of the Yellow Truck and Coach Manufacturing Company, has been elected vice-president of the **Bradfield Motors, Inc.**, Chicago.